HIOKI

AC/DC CURRENT PROBE
CT6841A, CT6843A, CT6844A, CT6845A, CT6846A

NEW

Introducing updated clamp-type current sensors Measure EV power consumption with a high degree of accuracy

Development of battery-powered electric vehicles (EVs) is accelerating as part of the global effort to realize a decarbonized society. The CT6840A series, which offers improved DC current measurement accuracy compared to the previous CT6840 series, can measure DC power in battery drive systems and solar power systems at a higher level of accuracy.

Features

- **DC current measurement accuracy ±0.2% rdg**
- **Easy-to-attach clamp-type design**
- **Operating temperature range -40°C to 85°C**
- **Five models, ranging from 20 A to 1000 A**
- **Frequency band DC to 2 MHz**
- **Automatic phase correction function**

Automatic phase correction function

Information stored in the current sensors' internal memory

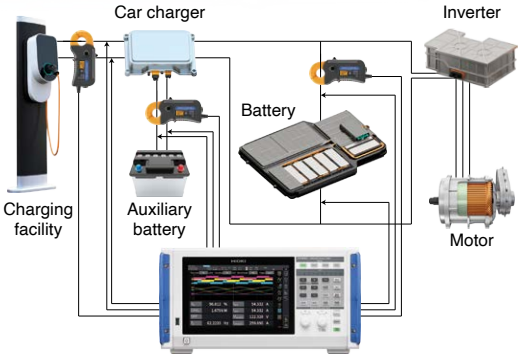
Phase shift	Rated current
Sensor model	Serial number

Automatic information retrieval

The CT6840A series provides automatic phase correction for automatically correcting current sensor phase just by connecting to the Power Analyzer PW8001. This function automates configuration of phase correction values, a process that previously had to be carried out manually, eliminating settings errors and facilitating accurate power measurement. (All current sensors have phase characteristics, and the Power Analyzer performs phase correction so that power can be measured accurately.)

Application

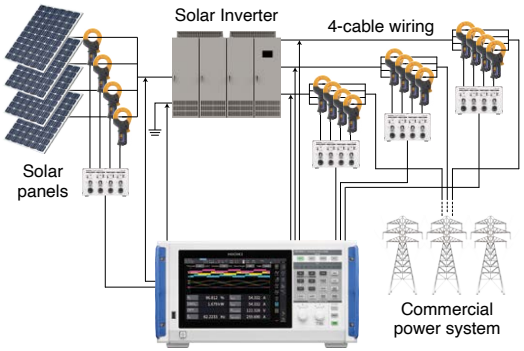
WLTP-compliant fuel efficiency evaluation testing



The "clamping" nature of the CT6840A series allows current measurement in an operating vehicle without requiring cables to be cut. When used in combination with a Hioki Power Analyzer, it can accurately perform current and power calculations for system batteries during charging and discharging as required for fuel efficiency measurements under the WLTP international standard.

Application

Solar Inverter (PCS) efficiency evaluation



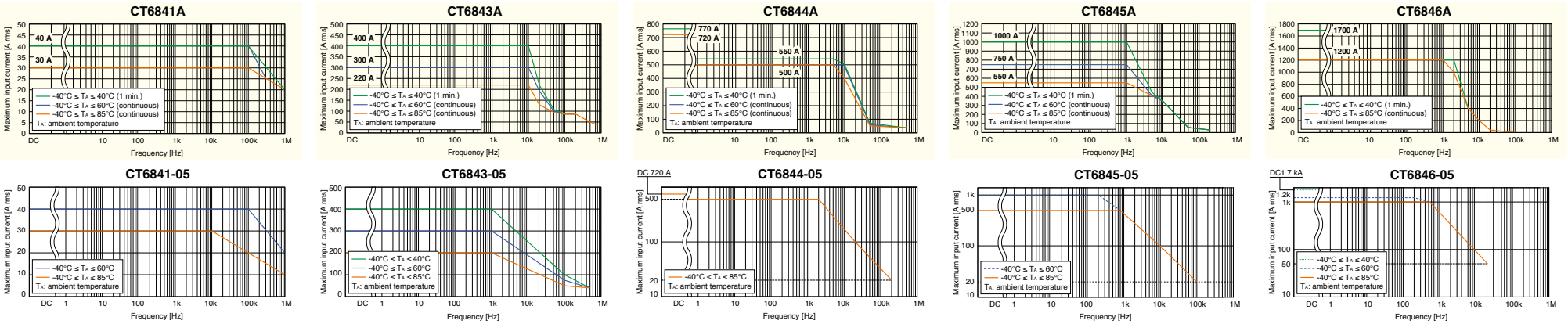
In large-scale solar power systems like megasolar installations, extremely large currents on the order of 1000 A to 3000 A branch out and flow through two to four wires. Current values of each wire measured with the CT6840A series sensors can be added for the total current value using the box-type CT9557 sensor unit. The total current value will be output as one signal to allow evaluation of PCS efficiency.

Comparison with previous products

Model	CT6841-05 to be discontinued	CT6841A	CT6843-05 Discontinued	CT6843A	CT6844-05 to be discontinued	CT6844A	CT6845-05 to be discontinued	CT6845A	CT6846-05 to be discontinued	CT6846A
Appearance	 Good Design Award*1 iF Design Award*1	 NEW	 Good Design Award*1 iF Design Award*1	 NEW	 iF Design Award*1	 NEW	 Good Design Award*1	 NEW	 Good Design Award*1	 NEW
Rated current	20 A AC/DC	20 A AC/DC	200 A AC/DC	200 A AC/DC	500 A AC/DC	500 A AC/DC	500 A AC/DC	500 A AC/DC	1000 A AC/DC	1000 A AC/DC
Diameter of measurable conductors	Max. ϕ 20 mm (0.79 in.)	Max. ϕ 20 mm (0.79 in.)	Max. ϕ 20 mm (0.79 in.)	Max. ϕ 20 mm (0.79 in.)	Max. ϕ 20 mm (0.79 in.)	Max. ϕ 20 mm (0.79 in.)	Max. ϕ 50 mm (1.97 in.)	Max. ϕ 50 mm (1.97 in.)	Max. ϕ 50 mm (1.97 in.)	Max. ϕ 50 mm (1.97 in.)
Frequency band (±3 dB)	DC to 1 MHz	DC to 2 MHz	DC to 500 kHz	DC to 700 kHz	DC to 200 kHz	DC to 500 kHz	DC to 100 kHz	DC to 200 kHz	DC to 20 kHz	DC to 100 kHz
Amplitude accuracy **DC** ±(% of reading + % of full scale)	±0.3% ±0.05%	±0.2% ±0.05%	±0.3% ±0.02%	±0.2% ±0.02%	±0.3% ±0.02%	±0.2% ±0.02%	±0.3% ±0.02%	±0.2% ±0.02%	±0.3% ±0.02%	±0.2% ±0.02%
Amplitude accuracy **DC < f ≤ 100 Hz** ±(% of reading + % of full scale)	±0.3% ±0.01%	±0.2% ±0.01%	±0.3% ±0.01%	±0.2% ±0.01%	±0.3% ±0.01%	±0.2% ±0.01%	±0.3% ±0.01%	±0.2% ±0.01%	±0.3% ±0.01%	±0.2% ±0.01%
Linearity errors	Not defined	±20 ppm typical	Not defined	±20 ppm typical	Not defined	±20 ppm typical	Not defined	±20 ppm typical	Not defined	±20 ppm typical
Output noise	5 mV pp or less*2	1.2 mV rms or less*3	5 mV pp or less*2	900 µV rms or less*3	5 mV pp or less*2	900 µV rms or less*3	5 mV pp or less*2	700 µV rms or less*3	5 mV pp or less*2	600 µV rms or less*3
Common-Mode Rejection Ratio (CMRR)	0.05% f.s. or less*4	DC to 1 kHz: 140 dB or greater*5 1 kHz to 10 kHz: 125 dB or greater*5 10 kHz to 100 kHz: 100 dB or greater*5 100 kHz to 1 MHz: 80 dB or greater*5	0.05% f.s. or less*4	DC to 1 kHz: 150 dB or greater*5 1 kHz to 10 kHz: 135 dB or greater*5 10 kHz to 100 kHz: 115 dB or greater*5 100 kHz to 500 kHz: 95 dB or greater*5	0.05% f.s. or less*4	DC to 1 kHz: 150 dB or greater*5 1 kHz to 10 kHz: 135 dB or greater*5 10 kHz to 100 kHz: 120 dB or greater*5 100 kHz to 300 kHz: 100 dB or greater*5	0.05% f.s. or less*4	DC to 1 kHz: 150 dB or greater*5 1 kHz to 10 kHz: 130 dB or greater*5 10 kHz to 100 kHz: 100 dB or greater*5	0.05% f.s. or less*4	DC to 1 kHz: 150 dB or greater*5 1 kHz to 10 kHz: 130 dB or greater*5 10 kHz to 50 kHz: 100 dB or greater*5
Automatic phase correction*6	-	Yes	-	Yes	-	Yes	-	Yes	-	Yes

*1: Awarded for the previous model *2: 100 kHz or less *3: ≤ 1 MHz *4: 1000 Vrms, DC to 100 Hz *5: Effect on output voltage, common mode voltage *6: Only when connecting to PW8001

Improved frequency derating characteristics



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

HIOKI

HIOKI E. E. CORPORATION

DISTRIBUTED BY

HEADQUARTERS
81 Koizumi,
Ueda, Nagano 386-1192 Japan
https://www.hioki.com/

Scan for all regional contact information