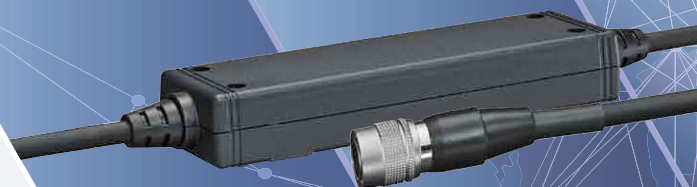




500 A Rated Specifications

Flagship model



*Ultra-High Performance  
AC/DC Current Sensor*



800 A Rated Specifications

## World-Class Accuracy & Measurement Range

- 500 A (rms), 800 A (rms) Rated for measurement of large currents
- 4 MHz ( $\pm 3$  dB) Wide measurement frequency range
- $\pm 10$  ppm Excellent linearity (500 A rated specifications)
- $\pm 0.02\%$  rdg. ( $\pm 0.007\%$  f.s.) Superior basic measurement accuracy (500 A rated specifications)
- 120 dB (100 kHz) High Common-Mode Rejection Ratio (CMRR)



# For True Current Measurement

High inverter efficiency and improved power saving technology performance for the power electronics, natural energy, and automotive industries.  
Responding to the advanced demands of every industrial field.

## *AC/DC Current Sensor CT6904*



### *Specifications*

**Rated 500 A (rms)**

**Model: CT6904**

**Measurement Frequency Range**

**4 MHz**  
(±3 dB)

**Linearity**

**±10 ppm**

**Measurement Accuracy**

**±0.02% rdg.**  
(±0.007% f.s.)

**CMRR**

**120 dB**  
(100 kHz)

**Rated 800 A (rms)**

**Model: CT6904-60**

**Measurement Frequency Range**

**4 MHz**  
(±3 dB)

**Linearity**

**±12.5 ppm**

**Measurement Accuracy**

**±0.025% rdg.**  
(±0.009% f.s.)

**CMRR**

**120 dB**  
(100 kHz)



Diagram to scale

## >>> High Performance Combination

### POWER ANALYZER PW6001

Achieve maximum performance  
when used in combination  
with the POWER ANALYZER  
PW6001



# Superior Performance

## World-Class

### Measurement Frequency Range of 4 MHz

Current sensor performance is maximized with the "Zero Flux (Fluxgate Detection)" measurement method.

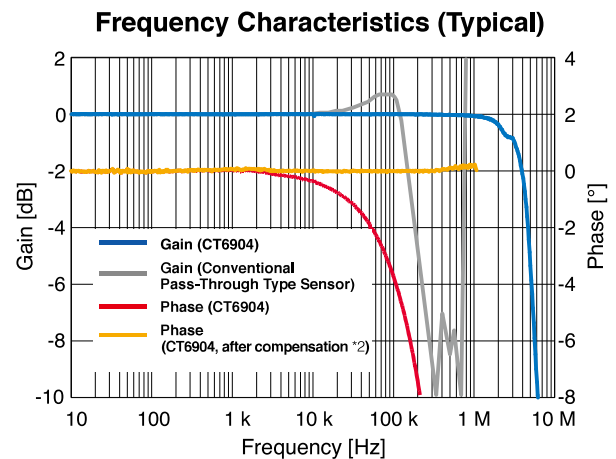
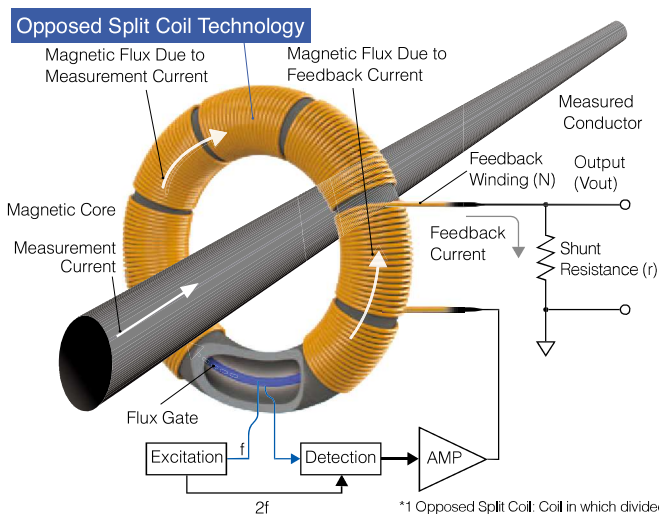
High-frequency currents are detected with the winding (CT method), and DC to low frequency currents are detected with the "flux gate."

Newly developed opposed split coil technology \*1 is used in winding (CT) areas, achieving a wide measurement range from DC to 4 MHz.

> Online Library



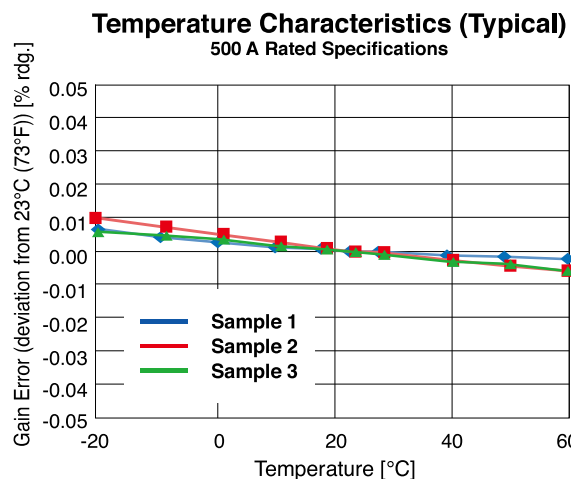
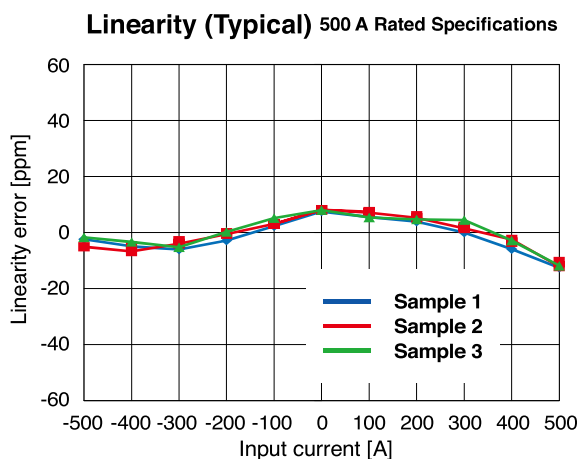
See here for technical documents on phase compensation in current sensors.



## High Accuracy and Measurement Stability

### ±10 ppm Linearity, ±0.02% rdg. ±0.007% f.s. Basic Accuracy (500 A Rated Specifications)

By using a fluxgate element for DC to low frequency current detection, we have been able to achieve a level of measurement accuracy and temperature stability that is not possible with the Hall element method.



Linearity: Changes the input current (DC) at intervals of 100 A from +500 A to 0 A to -500 A to 0 A to +500 A to measure the output voltage.  
Determined by the difference between the regression line (calculated from the above measurements) and measurement points.

## High Noise Resistance

### Common-Mode Rejection Ratio (CMRR) of 120 dB or More (100 kHz)

The opposed split coil is completely shielded with a uniquely shaped solid shield, achieving both broad bandwidth and superior noise resistance.

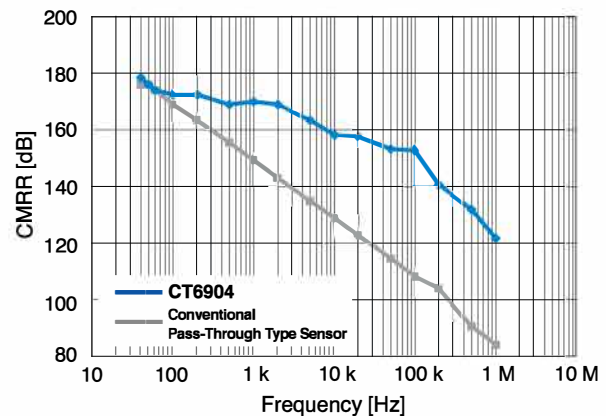
This allows accurate measurement without influence from surrounding voltage.

#### Solid Shield

Aluminum shield machined into a unique shape to eliminate influence on current measurements



#### Common-Mode Voltage Rejection Ratio (Typical)



## Significant Resistance to Conductor Position Effects

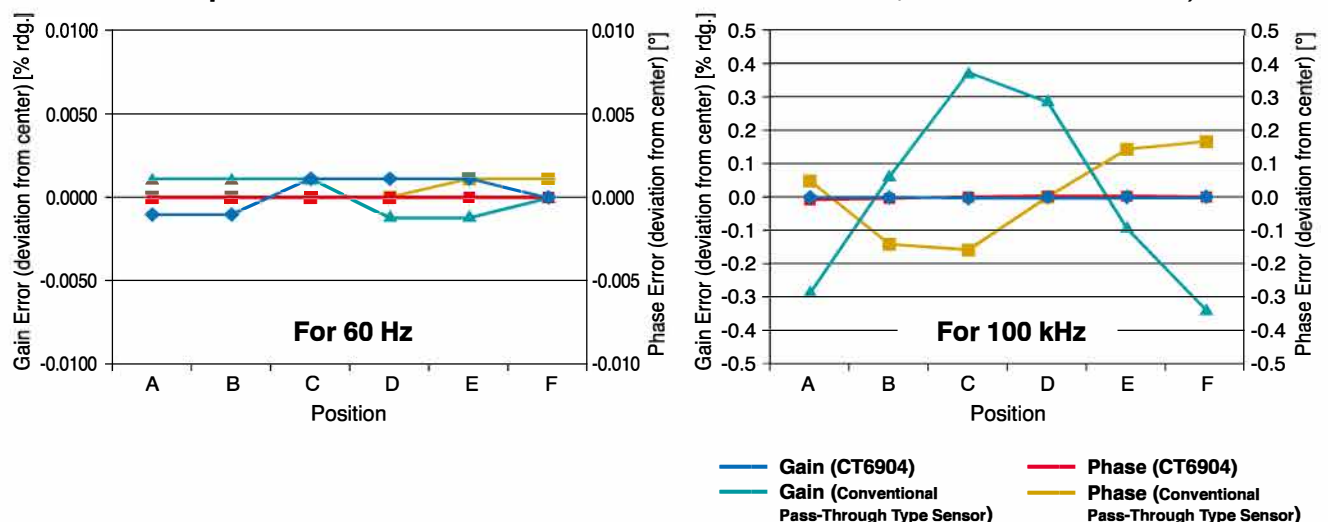
### Stable Measurement with High Reproducibility

The solid shield not only improves noise resistance but also significantly reduces the effect from the conductor position. Even at high frequency, the conductor position has little effect on measurement values, enabling measurements with high reproducibility.



Position: A to F

#### Comparison of Effect of Conductor Position on Inner Core (CT6904 and Conventional Model)



## Unmatched Measurement Range and Noise Resistance

# Example Applications

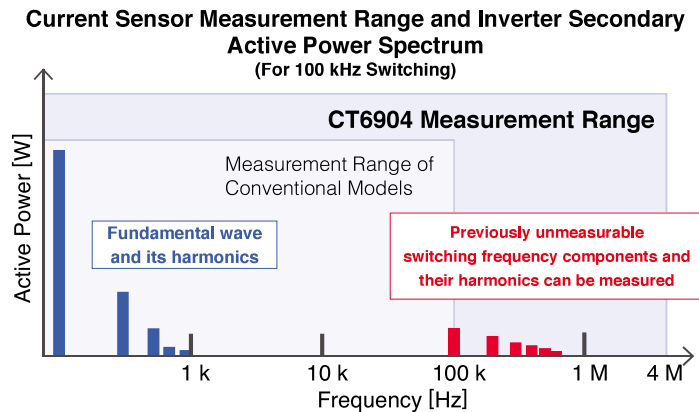
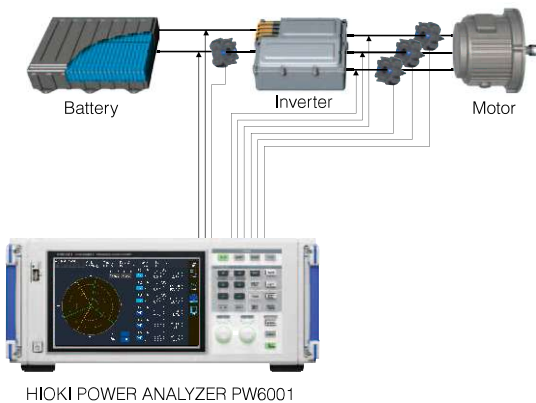
> Online Library

## High-Precision and Efficiency Testing of SiC/GaN Inverters

A wide range and small voltage current phase error are essential for the highly precise measurement of switching frequency power during PWM output.



See here for technical documents on SiC inverter power measurements.



The CT6904 features flat frequency characteristics over a wide range to provide accurate measurement of not only fundamental wave current, but also switching frequency current.

Since the CT6904 achieves both wide-range and highly accurate measurement performance, it can be used in combination with a power analyzer for more precise measurements of inverter input/output power and efficiency than ever before.

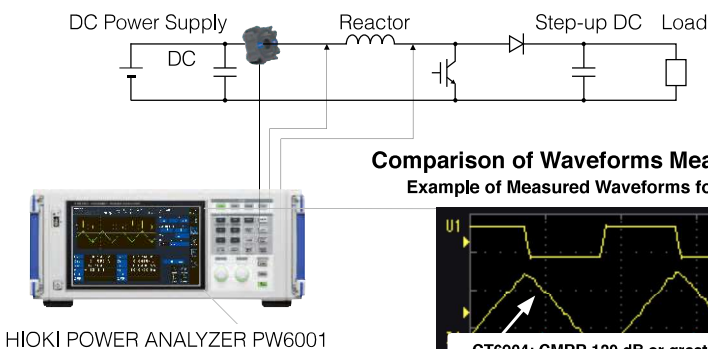
> Online Library

## Reactor/Transformer Loss Analysis

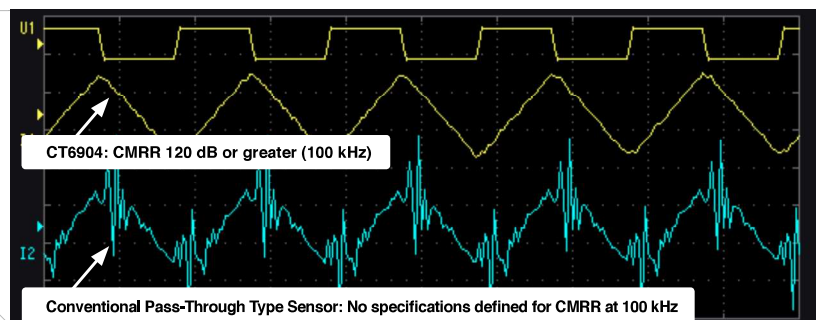
Reactor and transformer loss measurement is becoming increasingly important for furthering the efficiency and miniaturization of power converters.



See here for technical documents on reactor loss measurement.



**Comparison of Waveforms Measured with the CT6904 versus Conventional Sensor**  
Example of Measured Waveforms for Switching Current at 100 kHz (Measured with HIOKI PW6001)



Switching current is often obscured by noise. Thanks to the excellent noise resistance of the CT6904, you can now measure this type of signal with ease.

In addition, by using the phase compensation function of the POWER ANALYZER PW6001, previously difficult reactor and transformer loss measurements for large currents, high frequency, and low power factors can now be performed easily and quickly.

# Specifications

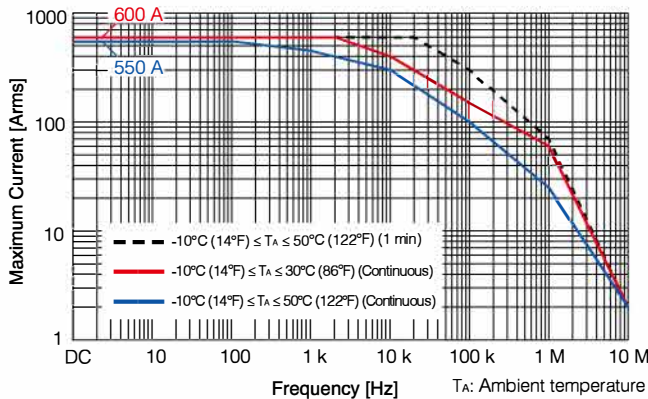
## General Specifications (Shared specifications for both the 500 A and 800 A rated models)

|                                          |                                                                                                                                                                                                                                                                                                |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating environment                    | Indoors, Pollution Degree 2, altitude up to 2000 m (6562.20 ft)                                                                                                                                                                                                                                |
| Operating temperature and humidity range | -10°C to 50°C (14°F to 122°F), and 80% RH or less (no condensation)                                                                                                                                                                                                                            |
| Storage temperature and humidity range   | -20°C to 60°C (-4°F to 140°F), and 80% RH or less (no condensation)                                                                                                                                                                                                                            |
| Dielectric withstand voltage             | 7.4 kV AC (sensed current of 1 mA), 50 Hz/60 Hz: 1 min<br>Distance between feed-through window and cable output terminal                                                                                                                                                                       |
| Power supply                             | Power supplied from PW6001, PW3390, or CT9555                                                                                                                                                                                                                                                  |
| Maximum rated power consumption          | 7 VA (500 A/55 Hz measurement, with a power supply of $\pm 12$ V)                                                                                                                                                                                                                              |
| Interface                                | Dedicated interface (ME15W)                                                                                                                                                                                                                                                                    |
| Dimensions                               | Approx. 139 mm (5.47 in) W x 120 mm (4.72 in) H x 52 mm (2.05 in) D (excluding protrusions and cables)                                                                                                                                                                                         |
| Output cable length                      | Approx. 3 m (9.84 ft) (including relay box)<br>(Specifications for an output cable length of 10 m (32.81 ft):<br>Approx. 10 m (32.81 ft) (including relay box))                                                                                                                                |
| Bracket hole diameter                    | $\varnothing$ 5.2 mm (0.20 in)<br>(M5 screws, Recommended tightening torque: 1.5 N • m to 2.0 N • m)                                                                                                                                                                                           |
| Mass                                     | 500 A Rated specifications: Approx. 1.0 kg (35.3 oz) (Specifications for an output cable length of 10 m (32.81 ft): Approx. 1.3 kg (45.9 oz))<br>800 A Rated specifications: Approx. 1.1 kg (38.8 oz) (Specifications for an output cable length of 10 m (32.81 ft): Approx. 1.4 kg (49.4 oz)) |
| Product warranty period                  | 3 years                                                                                                                                                                                                                                                                                        |
| Accessories                              | - Instruction manual<br>- Carrying case<br>- Color labels (for channel identification)                                                                                                                                                                                                         |

## Basic Specifications

| Model                             | 500 A Rated Specifications                                                                                                                                                                                                                       | 800 A Rated Specifications           |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Rated primary current             | 500 A AC/DC                                                                                                                                                                                                                                      | 800 A AC/DC                          |
| Diameter of measurable conductors | $\varnothing$ 32 mm (1.26 in) or less                                                                                                                                                                                                            |                                      |
| Maximum input current             | Within derating shown in figure below.<br>However, up to the value below is allowable if within 20 ms (design value).<br>When measuring current in the vicinity of derating, use a cooling time that is 10x or more than the current input time. |                                      |
|                                   | $\pm 1000$ A peak                                                                                                                                                                                                                                | $\pm 1200$ A peak                    |
| Output voltage                    | 4 mV/A                                                                                                                                                                                                                                           | 2 mV/A                               |
| Maximum rated voltage to ground   | 1000 V CAT III Expected transient overvoltage: 8000 V                                                                                                                                                                                            |                                      |
| Linearity                         | $\pm 10$ ppm Typical (23°C (73°F))                                                                                                                                                                                                               | $\pm 12.5$ ppm Typical (23°C (73°F)) |
| Offset voltage                    | $\pm 10$ ppm Typical (23°C (73°F), no input)                                                                                                                                                                                                     |                                      |

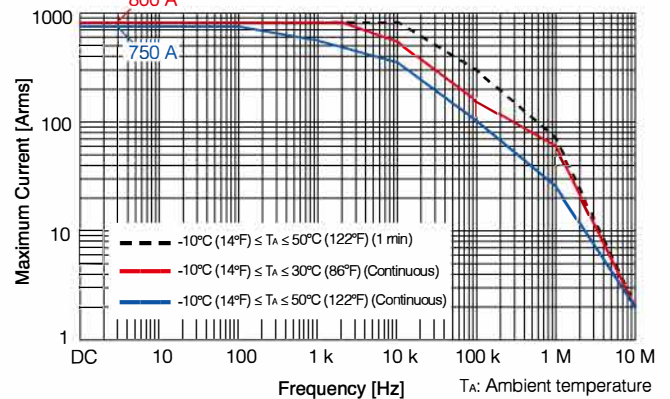
Derating Characteristics 500 A Rated Specifications



## Accuracy Specifications

| Accuracy guarantee conditions              | Guaranteed accuracy period: 1 year<br>Guaranteed accuracy period after adjustment made by Hioki: 1 year<br>Temperature and humidity for guaranteed accuracy: 23°C $\pm$ 5°C (73°F $\pm$ 9°F), 80% RH or less<br>Warm-up time: 30 min. or more<br>Input waveform: sine wave, Connection: measuring instrument with an input resistance of 0.9 M $\Omega$ to 1.1 M $\Omega$<br>Terminal-to-ground voltage: 0 V, no external magnetic field, conductor center position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                       |                             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------|-----------|-----------|--|-------|----------------------------|----------------------------|----|---------------------------------------|---------------------------------------|---|----------------|------------------------------------|-------------------------------------|-----------------|------------------------|------------------------------------|-------------------------------------|-----------------|-----------------------------|--------------------------------------|---------------------------------------|------------------|-------------------------|--------------------------------------|--------------------------------------|------------------|-------------------------|------------------------------------|-------------------------------------|-----------------|------------------------|------------------------------------|-------------------------------------|-----------------|-------------------------|------------------------------------|-------------------------------------|-----------------------------|--------------------------|----------------------------------|-----------------------------------|-----------------------------|---------------------------|----------------------------------|-----------------------------------|-----------------------------|----------------------------|----------------------------------|-----------------------------------|-----------------------------|--------------------------|----------------------------------|-----------------------------------|-----------------------------|-----------------|-----------------------------|--|---|
| Measurement accuracy                       | <table border="1"> <thead> <tr> <th rowspan="2">Frequency</th><th colspan="2">Amplitude</th><th rowspan="2">Phase</th></tr> <tr> <th>500 A Rated specifications</th><th>800 A Rated specifications</th></tr> </thead> <tbody> <tr> <td>DC</td><td><math>\pm 0.025\%</math> rdg. <math>\pm 0.007\%</math> f.s.</td><td><math>\pm 0.030\%</math> rdg. <math>\pm 0.009\%</math> f.s.</td><td>-</td></tr> <tr> <td>DC &lt; f &lt; 16 Hz</td><td><math>\pm 0.2\%</math> rdg. <math>\pm 0.02\%</math> f.s.</td><td><math>\pm 0.2\%</math> rdg. <math>\pm 0.025\%</math> f.s.</td><td><math>\pm 0.1^\circ</math></td></tr> <tr> <td>16 Hz <math>\leq</math> f &lt; 45 Hz</td><td><math>\pm 0.1\%</math> rdg. <math>\pm 0.02\%</math> f.s.</td><td><math>\pm 0.1\%</math> rdg. <math>\pm 0.025\%</math> f.s.</td><td><math>\pm 0.1^\circ</math></td></tr> <tr> <td>45 Hz <math>\leq</math> f <math>\leq</math> 65 Hz</td><td><math>\pm 0.02\%</math> rdg. <math>\pm 0.007\%</math> f.s.</td><td><math>\pm 0.025\%</math> rdg. <math>\pm 0.009\%</math> f.s.</td><td><math>\pm 0.08^\circ</math></td></tr> <tr> <td>65 Hz &lt; f <math>\leq</math> 850 Hz</td><td><math>\pm 0.05\%</math> rdg. <math>\pm 0.007\%</math> f.s.</td><td><math>\pm 0.05\%</math> rdg. <math>\pm 0.009\%</math> f.s.</td><td><math>\pm 0.12^\circ</math></td></tr> <tr> <td>850 Hz &lt; f <math>\leq</math> 1 kHz</td><td><math>\pm 0.1\%</math> rdg. <math>\pm 0.01\%</math> f.s.</td><td><math>\pm 0.1\%</math> rdg. <math>\pm 0.013\%</math> f.s.</td><td><math>\pm 0.4^\circ</math></td></tr> <tr> <td>1 kHz &lt; f <math>\leq</math> 5 kHz</td><td><math>\pm 0.4\%</math> rdg. <math>\pm 0.02\%</math> f.s.</td><td><math>\pm 0.4\%</math> rdg. <math>\pm 0.025\%</math> f.s.</td><td><math>\pm 0.4^\circ</math></td></tr> <tr> <td>5 kHz &lt; f <math>\leq</math> 10 kHz</td><td><math>\pm 0.4\%</math> rdg. <math>\pm 0.02\%</math> f.s.</td><td><math>\pm 0.4\%</math> rdg. <math>\pm 0.025\%</math> f.s.</td><td><math>\pm (0.08 \times f)^\circ</math></td></tr> <tr> <td>10 kHz &lt; f <math>\leq</math> 50 kHz</td><td><math>\pm 1\%</math> rdg. <math>\pm 0.02\%</math> f.s.</td><td><math>\pm 1\%</math> rdg. <math>\pm 0.025\%</math> f.s.</td><td><math>\pm (0.08 \times f)^\circ</math></td></tr> <tr> <td>50 kHz &lt; f <math>\leq</math> 100 kHz</td><td><math>\pm 1\%</math> rdg. <math>\pm 0.05\%</math> f.s.</td><td><math>\pm 1\%</math> rdg. <math>\pm 0.063\%</math> f.s.</td><td><math>\pm (0.08 \times f)^\circ</math></td></tr> <tr> <td>100 kHz &lt; f <math>\leq</math> 300 kHz</td><td><math>\pm 2\%</math> rdg. <math>\pm 0.05\%</math> f.s.</td><td><math>\pm 2\%</math> rdg. <math>\pm 0.063\%</math> f.s.</td><td><math>\pm (0.08 \times f)^\circ</math></td></tr> <tr> <td>300 kHz &lt; f <math>\leq</math> 1 MHz</td><td><math>\pm 5\%</math> rdg. <math>\pm 0.05\%</math> f.s.</td><td><math>\pm 5\%</math> rdg. <math>\pm 0.063\%</math> f.s.</td><td><math>\pm (0.08 \times f)^\circ</math></td></tr> <tr> <td>Frequency range</td><td colspan="2">4 MHz (<math>\pm 3</math> dB Typical)</td><td>-</td></tr> </tbody> </table> |                                       |                             | Frequency | Amplitude |  | Phase | 500 A Rated specifications | 800 A Rated specifications | DC | $\pm 0.025\%$ rdg. $\pm 0.007\%$ f.s. | $\pm 0.030\%$ rdg. $\pm 0.009\%$ f.s. | - | DC < f < 16 Hz | $\pm 0.2\%$ rdg. $\pm 0.02\%$ f.s. | $\pm 0.2\%$ rdg. $\pm 0.025\%$ f.s. | $\pm 0.1^\circ$ | 16 Hz $\leq$ f < 45 Hz | $\pm 0.1\%$ rdg. $\pm 0.02\%$ f.s. | $\pm 0.1\%$ rdg. $\pm 0.025\%$ f.s. | $\pm 0.1^\circ$ | 45 Hz $\leq$ f $\leq$ 65 Hz | $\pm 0.02\%$ rdg. $\pm 0.007\%$ f.s. | $\pm 0.025\%$ rdg. $\pm 0.009\%$ f.s. | $\pm 0.08^\circ$ | 65 Hz < f $\leq$ 850 Hz | $\pm 0.05\%$ rdg. $\pm 0.007\%$ f.s. | $\pm 0.05\%$ rdg. $\pm 0.009\%$ f.s. | $\pm 0.12^\circ$ | 850 Hz < f $\leq$ 1 kHz | $\pm 0.1\%$ rdg. $\pm 0.01\%$ f.s. | $\pm 0.1\%$ rdg. $\pm 0.013\%$ f.s. | $\pm 0.4^\circ$ | 1 kHz < f $\leq$ 5 kHz | $\pm 0.4\%$ rdg. $\pm 0.02\%$ f.s. | $\pm 0.4\%$ rdg. $\pm 0.025\%$ f.s. | $\pm 0.4^\circ$ | 5 kHz < f $\leq$ 10 kHz | $\pm 0.4\%$ rdg. $\pm 0.02\%$ f.s. | $\pm 0.4\%$ rdg. $\pm 0.025\%$ f.s. | $\pm (0.08 \times f)^\circ$ | 10 kHz < f $\leq$ 50 kHz | $\pm 1\%$ rdg. $\pm 0.02\%$ f.s. | $\pm 1\%$ rdg. $\pm 0.025\%$ f.s. | $\pm (0.08 \times f)^\circ$ | 50 kHz < f $\leq$ 100 kHz | $\pm 1\%$ rdg. $\pm 0.05\%$ f.s. | $\pm 1\%$ rdg. $\pm 0.063\%$ f.s. | $\pm (0.08 \times f)^\circ$ | 100 kHz < f $\leq$ 300 kHz | $\pm 2\%$ rdg. $\pm 0.05\%$ f.s. | $\pm 2\%$ rdg. $\pm 0.063\%$ f.s. | $\pm (0.08 \times f)^\circ$ | 300 kHz < f $\leq$ 1 MHz | $\pm 5\%$ rdg. $\pm 0.05\%$ f.s. | $\pm 5\%$ rdg. $\pm 0.063\%$ f.s. | $\pm (0.08 \times f)^\circ$ | Frequency range | 4 MHz ( $\pm 3$ dB Typical) |  | - |
| Frequency                                  | Amplitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       | Phase                       |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
|                                            | 500 A Rated specifications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 800 A Rated specifications            |                             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| DC                                         | $\pm 0.025\%$ rdg. $\pm 0.007\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | $\pm 0.030\%$ rdg. $\pm 0.009\%$ f.s. | -                           |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| DC < f < 16 Hz                             | $\pm 0.2\%$ rdg. $\pm 0.02\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | $\pm 0.2\%$ rdg. $\pm 0.025\%$ f.s.   | $\pm 0.1^\circ$             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 16 Hz $\leq$ f < 45 Hz                     | $\pm 0.1\%$ rdg. $\pm 0.02\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | $\pm 0.1\%$ rdg. $\pm 0.025\%$ f.s.   | $\pm 0.1^\circ$             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 45 Hz $\leq$ f $\leq$ 65 Hz                | $\pm 0.02\%$ rdg. $\pm 0.007\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | $\pm 0.025\%$ rdg. $\pm 0.009\%$ f.s. | $\pm 0.08^\circ$            |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 65 Hz < f $\leq$ 850 Hz                    | $\pm 0.05\%$ rdg. $\pm 0.007\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | $\pm 0.05\%$ rdg. $\pm 0.009\%$ f.s.  | $\pm 0.12^\circ$            |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 850 Hz < f $\leq$ 1 kHz                    | $\pm 0.1\%$ rdg. $\pm 0.01\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | $\pm 0.1\%$ rdg. $\pm 0.013\%$ f.s.   | $\pm 0.4^\circ$             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 1 kHz < f $\leq$ 5 kHz                     | $\pm 0.4\%$ rdg. $\pm 0.02\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | $\pm 0.4\%$ rdg. $\pm 0.025\%$ f.s.   | $\pm 0.4^\circ$             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 5 kHz < f $\leq$ 10 kHz                    | $\pm 0.4\%$ rdg. $\pm 0.02\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | $\pm 0.4\%$ rdg. $\pm 0.025\%$ f.s.   | $\pm (0.08 \times f)^\circ$ |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 10 kHz < f $\leq$ 50 kHz                   | $\pm 1\%$ rdg. $\pm 0.02\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $\pm 1\%$ rdg. $\pm 0.025\%$ f.s.     | $\pm (0.08 \times f)^\circ$ |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 50 kHz < f $\leq$ 100 kHz                  | $\pm 1\%$ rdg. $\pm 0.05\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $\pm 1\%$ rdg. $\pm 0.063\%$ f.s.     | $\pm (0.08 \times f)^\circ$ |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 100 kHz < f $\leq$ 300 kHz                 | $\pm 2\%$ rdg. $\pm 0.05\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $\pm 2\%$ rdg. $\pm 0.063\%$ f.s.     | $\pm (0.08 \times f)^\circ$ |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| 300 kHz < f $\leq$ 1 MHz                   | $\pm 5\%$ rdg. $\pm 0.05\%$ f.s.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $\pm 5\%$ rdg. $\pm 0.063\%$ f.s.     | $\pm (0.08 \times f)^\circ$ |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| Frequency range                            | 4 MHz ( $\pm 3$ dB Typical)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       | -                           |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| Effects of temperature                     | <ul style="list-style-type: none"> <li>Unit for f in accuracy calculations: kHz. f.s.: Rated primary current.</li> <li>Amplitude accuracy and phase accuracy are defined at the rated value or less and 100 Hz or higher is defined within the continuous range of ambient temperature of 50°C (122°F) of the derating in the figure. However, the accuracy defined for the frequency range of DC &lt; f &lt; 10 Hz is the design value.</li> <li>For the specifications for an output cable length of 10 m (32.81 ft), add an amplitude accuracy of <math>\pm (0.015 \times f)\%</math> rdg. to 50 kHz &lt; f <math>\leq</math> 1 MHz. The frequency range is 2 MHz (<math>\pm 3</math> dB Typical).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                       |                             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| Common-mode voltage rejection ratio (CMRR) | 140 dB or greater (50 Hz/60 Hz), 120 dB or greater (100 kHz) (Effect on output voltage/common-mode voltage)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |                             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |
| Effect of conductor position               | $\pm 0.01\%$ rdg. or less (100 A input, 50 Hz/60 Hz), $\pm 0.2\%$ rdg. or less (10 A input, 100 kHz), when using wire with 10 mm (0.39 in) outer diameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                       |                             |           |           |  |       |                            |                            |    |                                       |                                       |   |                |                                    |                                     |                 |                        |                                    |                                     |                 |                             |                                      |                                       |                  |                         |                                      |                                      |                  |                         |                                    |                                     |                 |                        |                                    |                                     |                 |                         |                                    |                                     |                             |                          |                                  |                                   |                             |                           |                                  |                                   |                             |                            |                                  |                                   |                             |                          |                                  |                                   |                             |                 |                             |  |   |

Derating Characteristics 800 A Rated Specifications



## Function Specifications

### Combined accuracy with connectable products

#### 1. PW6001 POWER ANALYZER

|                                                      | 500 A Rated Specifications                                                                 |                                                    | 800 A Rated Specifications                         |                                                    | Phase                              |
|------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------------|
| Frequency                                            | Current                                                                                    | Power                                              | Current                                            | Power                                              |                                    |
| DC                                                   | ±0.045% rdg. ±0.037% f.s.<br>(f.s. = PW6001 Range)                                         | ±0.045% rdg. ±0.057% f.s.<br>(f.s. = PW6001 Range) | ±0.050% rdg. ±0.037% f.s.<br>(f.s. = PW6001 Range) | ±0.050% rdg. ±0.057% f.s.<br>(f.s. = PW6001 Range) | PW6001 accuracy<br>Sensor accuracy |
| 45 Hz ≤ f ≤ 65 Hz                                    | ±0.04% rdg. ±0.027% f.s.<br>(f.s. = PW6001 Range)                                          | ±0.04% rdg. ±0.037% f.s.<br>(f.s. = PW6001 Range)  | ±0.045% rdg. ±0.027% f.s.<br>(f.s. = PW6001 Range) | ±0.045% rdg. ±0.037% f.s.<br>(f.s. = PW6001 Range) |                                    |
| Bandwidths<br>other than DC and<br>45 Hz ≤ f ≤ 65 Hz | PW6001 accuracy + Sensor accuracy<br>(Consider sensor rating when calculating f.s. error.) |                                                    |                                                    |                                                    |                                    |

- For other measurement parameters, add the PW6001 accuracy and the sensor accuracy (and consider the sensor rating when calculating the f.s. error).
- 500 A Rated specifications: For 10 A Range and 20 A Range, apply  $\pm 0.12\%$  f.s. (f.s. = PW6001 Range)
- 800 A Rated specifications: For 20 A Range and 40 A Range, apply  $\pm 0.12\%$  f.s. (f.s. = PW6001 Range)
- Accuracy additions defined by the POWER ANALYZER and sensor specifications also apply.

#### 2. PW3390 POWER ANALYZER

- Add the power analyzer accuracy and the sensor accuracy (and consider the sensor rating when calculating f.s. error).
- Accuracy additions defined by the POWER ANALYZER and sensor specifications also apply.

#### 3. CT9555 SENSOR UNIT

- Sensor accuracy  $\times 1.5$  (when the output coaxial cable is no longer than 1.6 m (5.25 ft))
- For the specifications for an output cable length of 10 m (32.81 ft), a frequency range of 1 MHz ( $\pm 3$  dB Typical).
- Accuracy additions defined by the conditions in specifications for connected instruments and sensors also apply.

### Phase shift correction value

- Compensation value when performing phase shift correction with the PW6001 or PW3390 (Typical): 300 kHz -9.82° (Common to 500 A rated specifications and 800 A rated specifications)
- If you would like even more accurate compensation values, the inspection data sheet (sold separately) lists the phase shift correction value for individual items.

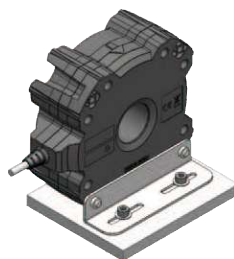
## Unique Shape Supports a Variety of Installation Scenarios

The longer the measured conductor, the greater the measurement error due to conductor inductance and parasitic capacitance. To keep the sources of error to a minimum, it is necessary to keep the conductor short.

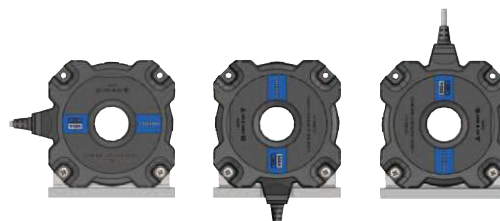
With the CT6904 you can select from a variety of installation methods, allowing you to minimize the length of the measured conductor.



Wall Installation Using Screws

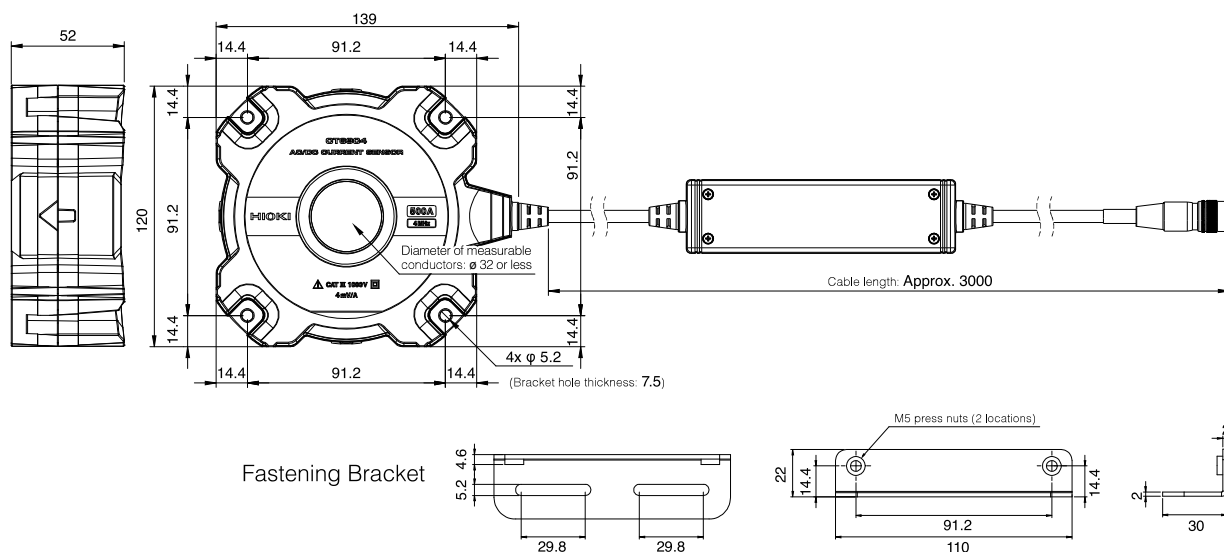


Fastening Bracket (Built-To-Order)



The output cable can face any direction.

### Dimensional Drawing (Shared specifications for both the 500 A and 800 A rated models, Unit: mm)



HIOKI ME15W (12-pin terminal)



Fastening Bracket (Built-To-Order)



SENSOR UNIT CT9555 (Option)

#### Model Name: AC/DC CURRENT SENSOR CT6904

Model No.  
(Order Code) (Note)

CT6904 (500 A AC/DC Rated, ME15W terminal)

#### Built-To-Order

Model No.  
(Order Code) (Note)

CT6904-01 (Output Cable 10 m (32.81 ft) length)

CT6904-60 (800 A AC/DC Rated, ME15W terminal)

CT6904-61 (Output Cable 10 m (32.81 ft) length, 800 A AC/DC Rated)

(Code No. None) Fastening Bracket

#### Option: SENSOR UNIT CT9555

Model No.  
(Order Code) (Note)

CT9555 For power supply when using a current sensor by itself, 1 ch, with waveform output

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

**HIOKI**  
HIOKI E. E. CORPORATION

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All information correct as of Jan. 24, 2019. All specifications are subject to change without notice.

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