

Maximizing the Efficiency of Energy Conversion



Super Precise $\pm 0.1\%$ Accuracy Model to Meet the Demanding Needs of Today

Exceed the Accuracy of Direct Wiring

With Pull-Through Current Sensors



Pull-through Current Sensors

Models **CT6862-10**, **CT6863-10** and **9709-10**

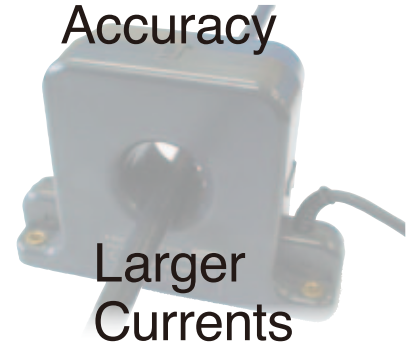
For 50A, 200A and 500A Testing

A Higher-Accuracy Power Meter Supporting the Attainment of Maximum Efficiency

Improved Efficiency

The needs of electrical devices driving energy conservation and green energy initiatives such as motors, inverters, solar panels, power conditioners, electric vehicles, and air conditioners are increasing at a pace never seen before. For R&D centers wishing for 0.1% levels of efficiency improvement, highly precise and accurate large current measurements are now within reach. The new 3390-10 delivers unsurpassed top-of-the-class $\pm 0.1\%$ accuracy to aid in accomplishing maximum efficiency in all of your devices.

Enhanced Accuracy



Larger Currents

POINT 1 Pair the 3390-10 with High Accuracy Sensors And Achieve an Even Higher Level of Excellence in Testing

High Accuracy Version of Model 3390

High Accuracy Versions of Pull-through Current Sensors



3390-10



CT686x-10 series 9709-10

Combined Accuracy of

$\pm 0.1\%$

$\pm 0.16\%$
Standard 3390 Accuracy

Enriched Current Sensors Offer Even High Accuracy

Pull-through Current Sensor CT6862-10 50A

Pull-through Current Sensor CT6863-10 200A

Pull-through Current Sensor 9709-10 500A



Pull-through current sensors deliver accuracy surpassing that of traditional shunt resistors while remaining resilient against overheating to enable high current measurements

Standard Setup

Power Meter Accuracy

$\pm 0.1\%$

Current Sensor Accuracy

$\pm 0.06\%$

Combined

Accuracy differs depending on current range

45 to 66Hz
 $\pm 0.16\%$

High Accuracy Setup

Defined Combined Accuracy

All Ranges

45 to 66Hz
 $\pm 0.1\%$

Refer to specifications for DC accuracy.

Enhanced accuracy parameters available with the higher accuracy combination:

- Voltage Measurement Accuracy: DC (45 to 66 Hz accuracy remains the same as the 3390)
- Current and Active Power Measurement Accuracy: DC and 45 to 66Hz
- Effect of Power Factor: 45 to 66Hz

Accuracy for other parameters is the same as that on the standard Model 3390. **Accuracy is guaranteed for 1 year.**

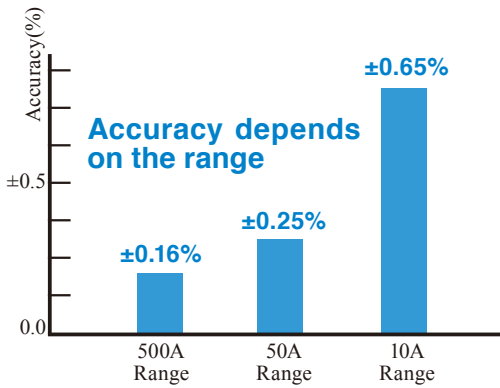
Accuracy for the high accuracy Models 3390-10 and Current Sensors are not defined individually. Please use these products in combination to obtain $\pm 0.1\%$ accuracy.

No need to worry about setting the correct range.

POINT 2 ±0.1% on ALL Ranges
Switch from one range to another and still maintain the same accuracy.

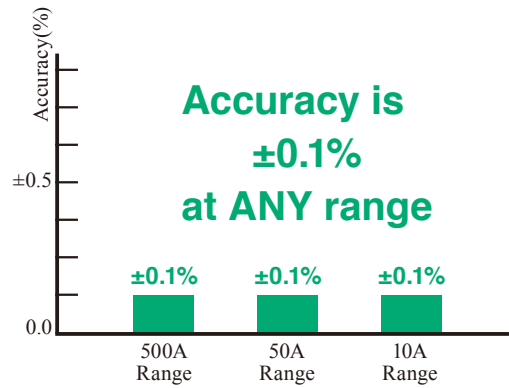


Standard Model 3390



Accuracy when pairing Model 3390 with the 9709 AC/DC Current Sensor (500A) and measuring the f.s. current at each range (45 to 66Hz)

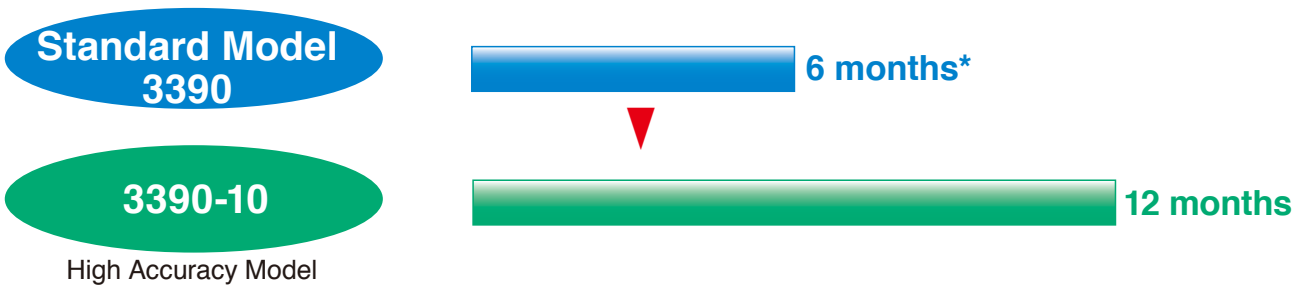
High Accuracy Model 3390-10



Accuracy when pairing Model 3390-10 with the 9709-10 AC/DC Current Sensor (500A) and measuring the f.s. current at each range (45 to 66Hz)

High Accuracy Guarantee Period is Further Extended

POINT 3 Accuracy guaranteed for 1 year
Minimize calibration frequency and maximize work efficiency



The following options are also offered with 1 year guaranteed accuracy:

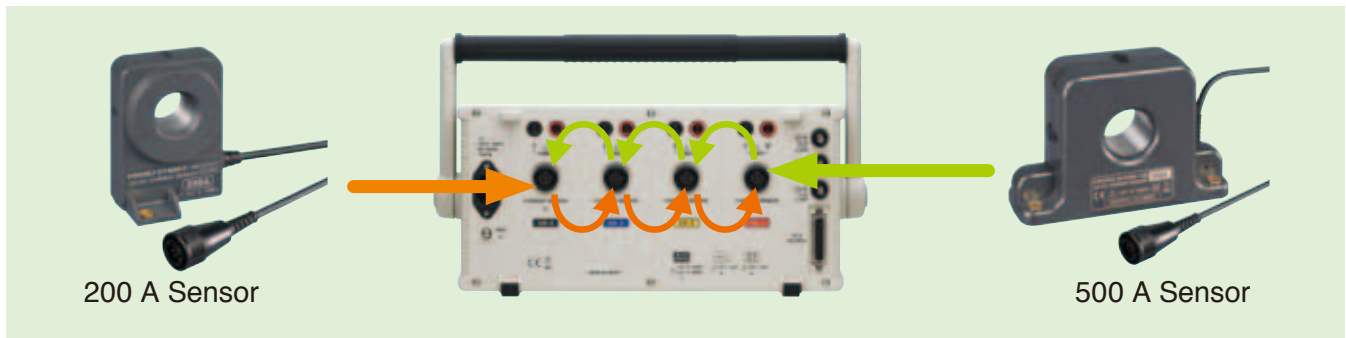
- MOTOR TESTING OPTION 9791
- D/A OUTPUT OPTION 9792
- MOTOR TESTING & D/A OUTPUT OPTION 9793

*Accuracy for Models 9791, 9792 and 9793 remain the same.

For 1-year guaranteed accuracy on Model 3390, the accuracy uncertainty must increase 1.5 times the accuracy guaranteed for 6 months.

POINT 4 Measure on Any Channel

High accuracy using HIOKI high accuracy current sensors is guaranteed, no matter which channel you use



Model 3390-10 Specifications

Accuracy	Accuracy guaranteed for 1 year, Post-adjustment accuracy guaranteed for 6 months		
	Voltage(U)	Current(I)	Active Power(P)
DC	±0.07% rdg. ±0.1% f.s.	±0.07% rdg. ±0.1% f.s.	±0.07% rdg. ±0.1% f.s.
45 Hz to 66 Hz	±0.05% rdg. ±0.05% f.s.	±0.05% rdg. ±0.05% f.s.	±0.05% rdg. ±0.05% f.s.
	Accuracy is defined for the frequency range indicated above only when pairing Model 3390-10 with HIOKI high accuracy current sensors (where f.s. is based on the ranges of the 3390-10). Voltage and active power values for 1000 V or higher measurements are for reference only.		
	Voltage(U)	Current(I)	Active Power(P)
0.5 Hz to 30 Hz	±0.1% rdg. ±0.2% f.s.	±0.1% rdg. ±0.2% f.s.	±0.1% rdg. ±0.2% f.s.
30 Hz to 45 Hz	±0.1% rdg. ±0.1% f.s.	±0.1% rdg. ±0.1% f.s.	±0.1% rdg. ±0.1% f.s.
66 Hz to 1 kHz	±0.1% rdg. ±0.1% f.s.	±0.1% rdg. ±0.1% f.s.	±0.1% rdg. ±0.1% f.s.
1 kHz to 10 kHz	±0.2% rdg. ±0.1% f.s.	±0.2% rdg. ±0.1% f.s.	±0.2% rdg. ±0.1% f.s.
10 kHz to 50 kHz	±0.3% rdg. ±0.2% f.s.	±0.3% rdg. ±0.2% f.s.	±0.4% rdg. ±0.3% f.s.
50 kHz to 100 kHz	±1.0% rdg. ±0.3% f.s.	±1.0% rdg. ±0.3% f.s.	±1.5% rdg. ±0.5% f.s.
100 kHz to 150 kHz	±20% f.s.	±20% f.s.	±20% f.s.
	For current and active power accuracy within the frequency range indicated above, add the uncertainty range of the current sensors. The following accuracy data are for reference only: Voltage, current and active power within the 0.5 Hz to 10 Hz frequency range Voltage and active power exceeding 220 V within the 10 Hz to 10 Hz frequency range Voltage and active power exceeding 750 V within the 30 kHz to 100 kHz frequency range Voltage and active power exceeding (22000/f[kHz])V within the 100 kHz to 150 kHz frequency range Voltage and active power exceeding 1000 V		

Conditions for Guaranteed Accuracy	Current Input	Only when using HIOKI high-accuracy current sensors (options) (Accuracy specifications defined for Model 3390 apply when other sensors are used)
	Temperature and Humidity Range	23°C±3°C(73°F±5°F), max. 80% rh (3390-10) 23°C±5°C(73°F±9°F), max. 80% rh (when using the 50A to 500A range of Model 9709-10) ±1°C(1.8°F) of temperature after zero adjustment, within 23°C±5°C(73°F±9°F), max. 80% rh (when using the 10A and 20A range of Model 9709-10) 0 to 40°C(32°F to 104°F), max. 80% rh (when using Model CT6862-10 or CT6863-10)
	Warm-up time	At least 30 minutes
	Input	On condition that the signal is a sine wave, with power factor=1, voltage to ground=0V, after zero-adjustment is conducted with current sensors at 23°C±3°C(73°F±5°F), and when the fundamental waveform is the sync source
Temperature coefficient		When used within the operating temperature range but outside the guaranteed temperature and humidity ranges for accuracy, add the following (the f.s. of the ranges of Model 3390-10 applies)
	3390-10	±0.01% f.s./°C; for DC, add ±0.01% f.s./°C
	9709-10	Current: ±0.01% rdg./°C; for DC, add ±(0.005% f.s.+2 mA)/°C Active power: ±0.01% rdg./°C; for DC, add ±(displayed voltage value x (0.005% f.s. +2 mA))/°C
	CT6862-10, CT6863-10	Current: ±0.01% rdg./°C; for DC, add ±0.005% f.s. /°C Active Power: ±0.01
Effect of Power Factor		Maximum ±0.2% f.s. (at 45 Hz to 66 Hz, p.f.=0.0) Add ±0.45% f.s. when LPF is 500 Hz

For specifications not defined above, please refer to the catalog for Model 3390 Power Analyzer.

Power Analyzer (High Accuracy Model)
Order Code: 3390-10

Dedicated Current Sensors (High Accuracy Models)

AC/DC CURRENT SENSOR(50A)
Order Code: CT6862-10

AC/DC CURRENT SENSOR(200A)
Order Code: CT6863-10

AC/DC CURRENT SENSOR(500A)
Order Code: 9709-10

If calibration data sheets pairing the 3390-10 with specific current sensors are required, please specify at time of order. Calibration data sheets for specific combinations after the products have been delivered will require that the devices be returned to the HIOKI factory for re-calibration.

Please also specify preferred channels if necessary.

Supplied Accessories: Instruction Manual for Model 3390 x 1, Instruction Manual for Model 3390-10 x 1, Measurement Guide x 1, Power cord x 1, USB cable x 1, D-sub connector x 1 (when 9792 or 9793 is installed), Color label x 2

Please note: The dedicated PC application software and communication command manual for Model 3390 are also compatible to Model 3390-10. Please download them from the HIOKI website.

Please purchase separately-sold voltage cords and current sensors for measurements. A HIOKI-issued PC card is also necessary in order to save measured data.

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

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