Aggregate and measure large currents in multi-cable circuits

The Sensor Unit CT9555 Series are power supplies for high-precision current sensors with waveform output functionality. In addition to serving as a four-channel power supply, the CT9557 can also output a single waveform from an aggregate of input waveforms.

The CT9557’s total output function adds current waveforms from up to four input channels, converting them into a 2 V f.s. waveform for output. The device, which can generate either total waveform output or total RMS output, makes it possible to measure equipment such as high-capacity solar power conditioners and inverters, even in installations where issues with ratings and cable diameters made measurement impossible in the past.

Measuring large currents and multi-cable circuits with sum functionality

Once a current sensor has been attached to each branch cable, the CT9557 adds the sensor signals together to create a total signal. Since the device can treat multiple sensors as a single sensor, as illustrated in the figure above, the current can be measured using a single power meter.

Using a data logger to perform high-precision current measurement

In this setup, waveform output is monitored on the DC current side, and RMS output is monitored on the AC current side of the circuit. Even a logger that lacks RMS conversion functionality can be used to measure AC current. A wireless logger can also be used. If a high-precision voltmeter is used, both the AC and DC currents can be measured with a high degree of precision.
### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>SENSOR UNIT CT9557</th>
<th>SENSOR UNIT CT9556</th>
<th>SENSOR UNIT CT9555</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model No. (Order Code)</strong></td>
<td>CT9557</td>
<td>CT9556</td>
<td>CT9555</td>
</tr>
<tr>
<td><strong>Connectable current sensors</strong></td>
<td>Current sensors with a Hioki ME15W (male) output connector (CT6864-05, CT6877, CT6864-05, etc.)</td>
<td></td>
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<tr>
<td><strong>Output resistance</strong></td>
<td>50 Ohm</td>
<td></td>
<td>50 Ohm</td>
</tr>
<tr>
<td><strong>Operating temperature range</strong></td>
<td>10 °C to 50 °C (14 °F to 122 °F)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Product warranty period</strong></td>
<td>3 year</td>
<td>Not defined</td>
<td>3 year</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>• AC Adapter Z1002 (100 to 240 V AC, 50/60 Hz, maximum rated power when used with sensors: 155 VA) • External power supply (10 to 30 V DC, maximum rated power: 60 VA)</td>
<td>• AC Adapter Z1008 (100 to 240 V AC, 50/60 Hz, maximum rated power when used with sensors: 45 VA) • External power supply (10 to 30 V DC, maximum rated power: 15 VA)</td>
<td></td>
</tr>
<tr>
<td><strong>Response time</strong></td>
<td>0.8 s for both RMS output and total RMS output, 10 milliseconds for RMS output (when the input value changes as follows: 0% to 90%, 100% to 90%)</td>
<td>Not defined</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>116 mm (4.57 in)W × 67 mm (2.64 in)H × 132 mm (5.20 in)D mm</td>
<td>33 mm (1.30 in)W × 67 mm (2.64 in)H × 132 mm (5.20 in)D mm (excluding protruding parts)</td>
<td></td>
</tr>
<tr>
<td><strong>Mass</strong></td>
<td>420 g (14.8 oz)</td>
<td>200 g (7.1 oz)</td>
<td></td>
</tr>
<tr>
<td><strong>Accessories</strong></td>
<td>AC Adapter Z1002, power cord, user manual</td>
<td>AC Adapter Z1008, power cord, user manual</td>
<td></td>
</tr>
</tbody>
</table>

#### Compatible products

**AC/DC CURRENT SENSOR (pass-through type)**
- CT6862-05 50 A AC/DC φ24 mm DC to 1 MHz
- CT6863-05 200 A AC/DC φ24 mm DC to 500 kHz
- CT6904 500 A AC/DC φ32 mm DC to 4 MHz
- CT6875 500 A AC/DC φ36 mm DC to 2 MHz
- CT6876 1000 A AC/DC φ36 mm DC to 1.5 MHz
- CT6877 2000 A AC/DC φ80 mm DC to 1 MHz

**AC/DC CURRENT PROBE (clamp-on type)**
- CT6841-05 20 A AC/DC φ20 mm DC to 1 MHz
- CT6843-05 200 A AC/DC φ20 mm DC to 500 kHz
- CT6844-05 500 A AC/DC φ20 mm DC to 200 kHz
- CT6845-05 500 A AC/DC φ50 mm DC to 100 kHz
- CT6846-05 1000 A AC/DC φ50 mm DC to 20 kHz

**AC/DC CURRENT BOX (direct-connect type)**
- PW9100-03, -04 50 A AC/DC Terminal block (M6 screws) DC to 3.5 MHz

#### Options

- **CONNECTION CABLE CT9904**
  Hioki ME15W (12 pin) terminal to ME15W (12 pin) terminal, 1 m (3.28 ft) length (for connecting CT9957 total output to PW6001 or PW3390 only)

- **CONNECTION CORD L9217**
  Cord has insulated BNC connectors at both ends, 1.6 m (5.25 ft) length

- **CONNECTION CORD 9165**
  Cord has metallic BNC connectors at both ends, use at metallic terminal, 1.5 m (4.92 ft) length

- **CONVERSION CABLE CT9901**
  Hioki ME15W (12 pin) to Hioki ME15W (12 pin) connector

- **CONVERSION CABLE CT9990**
  Hioki PL23 (10 pin) to Hioki ME15W (12 pin) connector

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

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All information correct as of Jan. 9, 2021. All specifications are subject to change without notice.

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