The CWT from Power Electronic Measurements Ltd. is a state of the art wide-bandwidth ac current probe.

The CWT is ideal for power electronics development work because it combines an easy to use thin, flexible, clip-around coil with an ability to accurately replicate fast switching current waveforms be they sinusoidal, quasi-sinusoidal or pulsed.

Applications
- Monitoring current waveforms for semiconductor switches
- Development and servicing of power electronic equipment
- Monitoring high frequency sinusoidal currents
- Measuring fault currents or circuit breaker interruption currents
- Measuring pulses of current
- Measuring ac currents superimposed on large dc currents
- Measuring harmonic current components
- Measuring signal or earth leakage currents in 3-phase supply systems

Features
- Measurement range from 300mA to 300,000A
- Typical bandwidths from 0.1Hz to 16MHz
- The DC offset is no greater than 2mV over the operating temperature range.
- Thin and flexible, ‘clip-around’ coil in lengths from 300mm to 1000mm – other lengths available as custom designs
  - Easy to insert probe in confined spaces
  - Robust lockable ‘clip-in’ mechanism
  - Non-intrusive – loading the circuit under test by only a few pH
- Coil peak voltage isolation capability up to 10kV
- Instantaneous ±6V peak to peak output to plug directly into scope, data acquisition equipment, DVM or power recorders
- CE Marked
- Accuracy of ±1% of reading
### Performance Characteristics

<table>
<thead>
<tr>
<th>Type</th>
<th>Sensitivity (mV/A)</th>
<th>Peak current (kA)</th>
<th>Peak dl/dt (kA/μs)</th>
<th>Noise max(^1) (mV/Vp-p)</th>
<th>Droop typ. (%/ms)</th>
<th>LF (3dB) bandwidth typ. (Hz) (f_i)</th>
<th>Phase lead at 50Hz typ. (deg)</th>
<th>HF (3dB) bandwidth typ. (MHz) (f_o)</th>
<th>Coil Length (mm)</th>
<th>Coil Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWT015</td>
<td>200.0</td>
<td>0.03</td>
<td>0.2</td>
<td>6.5</td>
<td>130</td>
<td>150</td>
<td>2.0 @ 6kHz</td>
<td>6</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>CWT03</td>
<td>100.0</td>
<td>0.06</td>
<td>0.4</td>
<td>90</td>
<td>105</td>
<td>2.0 @ 4kHz</td>
<td>10</td>
<td>6.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CWT06</td>
<td>50.0</td>
<td>0.12</td>
<td>0.8</td>
<td>50</td>
<td>70</td>
<td>80</td>
<td>2.0 @ 3kHz</td>
<td>16</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>CWT1</td>
<td>20.0</td>
<td>0.3</td>
<td>2.1</td>
<td>40</td>
<td>20</td>
<td>25</td>
<td>1.9 @ 2kHz</td>
<td>16</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>CWT1N</td>
<td>20.0</td>
<td>0.3</td>
<td>2.0</td>
<td>20</td>
<td>3.0</td>
<td>3.5</td>
<td>1.0 @ 300Hz</td>
<td>16</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>CWT3</td>
<td>10.0</td>
<td>0.6</td>
<td>4.0</td>
<td>8.0</td>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

\(^1\) Distributed around the \(f_i\) (3dB) bandwidth.

\(^2\) For 2.5m cable length. Contact PEM for values of \(f_o\) for other coil and cable lengths

### Typical Accuracy

- Traceable calibration to ±0.2% with conductor central in the loop
- Variation with conductor position in the coil loop typically ±1%

### Typical Linearity

- ±0.05% (Full Scale)

### Coil and Cable

1. **Coil Circumference**: 300, 500, 700 or 1000mm
2. **Coil Cross Section (max)**: 8.5mm - (14 mm with sleeve)

### Peak Coil Voltage Isolation

10kV

- Safe peak working voltage to earth. The coils are flash tested at 15kVrms for 10 seconds. The coil is supplied with a removable silicone sleeve which provides additional mechanical protection. Information about continuous use of the coils at high voltage can be obtained from PEM.

### Temperature Range

- For de-rating due to temperature cycling please consult PEM
- -20°C to 100°C

### Cable Length (from box to coil)

- 2.5m or 4m

### Integrator

1. **Power Supply**
   - Battery 4 x AA (1.5V standard alkaline batteries)
   - plus
   - 2.1/2.5mm socket for 12 to 24V (±10%) DC input
   - Typical life 70hrs
   - Battery inoperative with DC supply present
2. **Rechargeable battery 4 x AA (rechargeable NiMH batteries)**
   - plus
   - 2.1/2.5mm socket for 12 to 24V (±10%) DC input
   - Recharge time 40hrs, Typical life 30hrs
   - Battery is charged whenever DC supply present

### Integrator Box Dimensions

- H = 183mm, W = 93mm, D = 32mm

### Output Socket

- BNC (output impedance 50Ω - unit supplied with 0.5m BNC - BNC coaxial cable)

### Minimum Output Loading

- 100Ω (for rated accuracy)

### Temperature Range

- 0°C to 40°C

### Ordering

- e.g. order code

<table>
<thead>
<tr>
<th>Type</th>
<th>Power Supply</th>
<th>Cable Length</th>
<th>Coil Circumference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CWT30 B</td>
<td>/</td>
<td>4</td>
<td>700</td>
</tr>
</tbody>
</table>

If you have any queries regarding the CWT or require specifications outside our standard ranges please do not hesitate to contact us.

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