The CWT Ultra-mini has an extremely thin, clip-around Rogowski coil of typically 1.6mm cross-section. Such a thin coil enables currents to be measured in the most difficult to reach parts of a power electronic converter with negligible disruption to the circuit under test.

Applications
- Switching current waveforms in power electronic circuits, for example
  - in MOSFET or IGBT devices as small as TO-220 or TO-47
  - in bond wires in power devices
  - to measure power losses in semiconductors
  - monitoring currents in small inductors, capacitors, snubber circuits, etc
- Measuring small AC currents in the presence of large DC currents (e.g. monitoring capacitor ripple)
- Power converter development and diagnostics
- Measuring high frequency sinusoidal, pulsed or transient currents
- Measuring high order harmonics

Key features
- Expanded operating temperature range -40°C to +125°C
- Extended (-3dB) bandwidth from a few Hz to 30MHz
- Current ratings from 30Apk to 6000Apk
- Improved peak di/dt capabilities up to 70kA/µs
- 1.7mm (max) cross section, flexible, clip-around coil
- ±6V into 1MΩ, and 50Ω drive capability
- Loads the circuit under test by only a few pH
- Positional accuracy typically ±2%

This latest release of the CWT Ultra-mini has improved:
- High frequency (-3dB) bandwidth of 30MHz
- Operating temperature range of -40°C to +125°C

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### Output

- ±6V peak corresponding to ‘Peak Current’ into ≥100kΩ (e.g. DC 1MΩ oscilloscope)
- ±2V peak at half ‘Sensitivity’ into 50Ω (for long output cables)

### Accuracy

- Variation with conductor position in the coil typically ±2% of reading (for a 2mm² conductor)
- Linearity (with current magnitude) 0.05% of reading

### Calibration

- Calibrated to ±0.2% reading with conductor central in the coil loop

### Temperature

- Coil and cable -40°C to +125°C. Integrator 0 to +40°C

### di/dt ratings

- These are ‘Absolute maximum di/dt ratings’ and values must not be exceeded:
  - Absolute max. peak di/dt: 70kA/µs
  - Absolute max. rms di/dt: 1.0kA/µs (1.2kA/µs for models CWT1 and above)

### Coil voltage

- 1.2kV peak. Safe peak working voltage to earth. Rating established by a 3kV rms, 50Hz, 60sec flash test

### Key features

1. Coil length (circumference) 80mm - longer coils available on request.
2. Coil cross-section (thickness) 1.7mm (max).
3. Cable length 1m (connecting cable coil to integrator) - longer cables available on request.
4. Battery options
   - Standard: 4 x AA 1.5V alkali batteries. Lifetime typically 25 hours.
   - Rechargeable: 4 x AA 1.2V NiMH batteries. Lifetime typically 10 hours.
   - External adaptor recharges batteries and powers unit.
5. Socket for external power adaptor (adaptor available from PEM as an option)
6. Electronics enclosure. Dimensions H=183mm, W=93mm, D=32mm.
7. Output BNC socket. Supplied with 0.5m BNC:BNC cable.

More detailed technical notes for this product are available at [www.pemuk.com](http://www.pemuk.com)

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**Generating the part code**

E.g. CWT

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<th>Coil length (mm)</th>
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CWT Ultra-mini, peak current 30A, rechargeable battery, 1m cable, 80mm coil.

*If you have any queries regarding the CWT or require specifications outside our standard ranges please contact us.*

[www.pemuk.com](http://www.pemuk.com)

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