

# CWT



For over 25 years the CWT has provided state of the art wide-bandwidth AC current measurement.

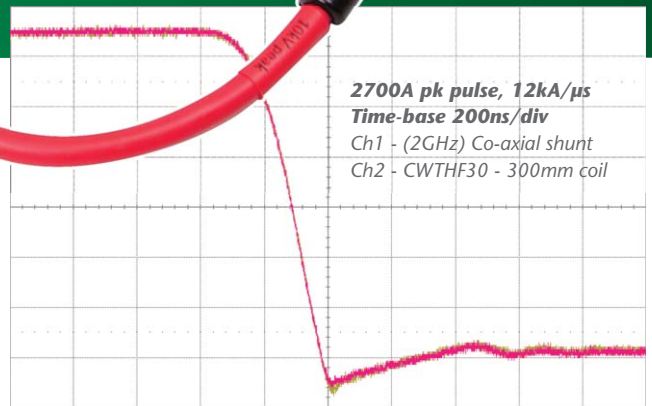
The CWT combines an easy to use thin, flexible, clip-around Rogowski coil with an ability to accurately replicate fast switching current waveforms be they, sinusoidal, quasi-sinusoidal, PWM or pulsed.

Ideal for a wide variety of applications, including power electronics development work, the CWT introduces practically zero insertion impedance to the DUT, offers isolation up to 10kV peak and is available in current ratings from 30A to 300kA.

### The new CWTHF models

The CWT range has been improved and extended to now include the NEW CWTHF featuring

- A novel electrostatic shielded Rogowski coil providing excellent immunity to interference from fast local dV/dt transients or large 50/60Hz voltages
- Extended (-3dB) high frequency bandwidth of up to 30MHz for a 300mm coil
- Peak di/dt capability of over 100kA/μs.



### Applications

The CWT can be used in a diverse range of applications:

- Semiconductor switching waveforms (device loss)
- High frequency (hf) sinusoidal currents, e.g. induction heating
- Power converter development and diagnostics
- Measuring small AC currents in the presence of large DC currents (e.g. monitoring capacitor ripple)
- Measuring current in motor drives and in particular power quality in VSD, UPS or SMPS circuits
- Monitoring lightning strikes
- EMC measurement and measuring harmonic current components
- Measuring fault currents or for use in pulsed power measurements



Model	Sensitivity (mV/A)	Peak current*1 (kA)	Noise max*2 (mVp-p)	Droop (%/ms)	LF (-3dB) bandwidth (Hz)	Peak di/dt (kA/μs)	HF (-3dB) bandwidth*3 (MHz)	
							300mm	700mm
CWTHF 015	200	0.03	15	85	150	2.0	20	8
CWTHF 03	100	0.06	11	78	105	4.0		8
CWTHF 06	50	0.12	8.0	70	80	8.0		10
CWTHF 1	20	0.3	6.0	50	50	20		10
CWTHF 3	10	0.6	12	11	12	40	30	15
CWT 3N	10	0.6	12.0	0.9	1.0	4.0	16	10
CWTHF 6	5.0	1.2	12	5.5	6.0	80	30	15
CWT 6	5.0	1.2	9.0	0.9	1.0	8.0	16	10
CWTHF 15	2.0	3.0	10	3.0	3.0	80	30	15
CWT 15	2.0	3.0	7.0	0.7	0.8	20	16	10
CWTHF 30	1.0	6.0	10	1.5	1.5	120	30	15
CWT 30	1.0	6.0	5.0	0.5	0.6	40	16	10
CWTHF 60	0.5	12	8.0	1.0	1.0	120	30	15
CWT 60	0.5	12	3.0	0.35	0.4	40	16	10
CWTHF 150	0.2	30	5.0	1.0	1.0	120	30	15
CWT 150	0.2	30	3.0	0.2	0.2	40	16	10
CWTHF 300	0.1	60	5.0	0.6	0.5	120	30	15
CWT 300	0.1	60	3.0	0.1	0.1	40	16	10
CWTHF 600	0.05	120	5.0	0.6	0.5	120	30	15
CWT 600	0.05	120	3.0	0.06	0.05	40	16	10
CWTHF 1500	0.02	300	5.0	0.6	0.5	120	30	15
CWT 1500	0.02	300	3.0	0.035	0.03	40	16	10

\*1. Higher Peak current than 300kA available on request \*2. Noise max. is the internally generated integrator noise which is at a maximum at LF(-3dB) bandwidth  
\*3. The High Frequency HF(-3dB) bandwidth is quoted for a 2.5m cable

<b>Output</b>	±6V peak corresponding to 'Peak Current' into ≥ 100kΩ (e.g. DC1MΩ oscilloscope) ±2V peak, Sensitivity is half the nominal value into = 50Ω									
<b>Accuracy</b>	Conductor position in the coil (for a 80mm <sup>2</sup> conductor) typically ±1% reading Linearity (with current magnitude) 0.05% reading									
<b>Calibration</b>	Calibrated to ±0.2% reading with conductor central in the coil loop									
<b>DC offset</b>	±3mV at 25°C									
<b>Temperature</b>	Coil and cable -20°C to +100°C Integrator 0°C to 40°C									
<b>di/dt ratings</b>	These are 'Absolute maximum di/dt ratings' and values must not be exceeded									
	<table border="1"> <thead> <tr> <th>Type</th> <th>Abs. Max. peak di/dt</th> <th>Abs. Max. rms di/dt</th> </tr> </thead> <tbody> <tr> <td>CWT HF</td> <td>120kA/μs</td> <td>1.5kA/μs</td> </tr> <tr> <td>CWT</td> <td>40kA/μs</td> <td>1.5kA/μs</td> </tr> </tbody> </table>	Type	Abs. Max. peak di/dt	Abs. Max. rms di/dt	CWT HF	120kA/μs	1.5kA/μs	CWT	40kA/μs	1.5kA/μs
Type	Abs. Max. peak di/dt	Abs. Max. rms di/dt								
CWT HF	120kA/μs	1.5kA/μs								
CWT	40kA/μs	1.5kA/μs								
<b>Coil length</b>	300, 500, 700 and 1000mm – longer coils available on request									
<b>Insulation</b>	10kV peak (8.5mm thick coil – removable silicone tube for mechanical protection 14mm thick)									
<b>Cable length</b>	1, 2.5 or 4m – length of cable from coil to electronics, longer cables available on request									
<b>Power</b>	<b>Options:</b> <b>B</b> - Standard: 4 x AA 1.5V alkaline batteries. Lifetime 25 hours. External adaptor disconnects batteries and powers unit. <b>R</b> - Rechargeable: 4 x AA 1.2V NiMH batteries. Lifetime 10 hours. External adaptor recharges batteries and powers unit. <b>External power adaptor</b> - US, EURO, UK versions available									

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

Model	/	Power option	/	Cable length (m)	/	Coil length (mm)
See table above		B - Battery R - Rechargeable		1, 2.5 or 4 (Custom lengths available)		300, 500, 700 or 1000 (Custom lengths available)
CWTHF 06	/	R	/	2.5	/	700

i.e. a CWTHF, peak current 120A, Rechargeable battery, 2.5m cable, 700mm circumference coil, 10kV peak coil, 8.5mm thick  
All units are supplied with, factory calibration certificate, hard carry case, 0.5m BNC:BNC output cable