



# CWT LF SPECIFICATION

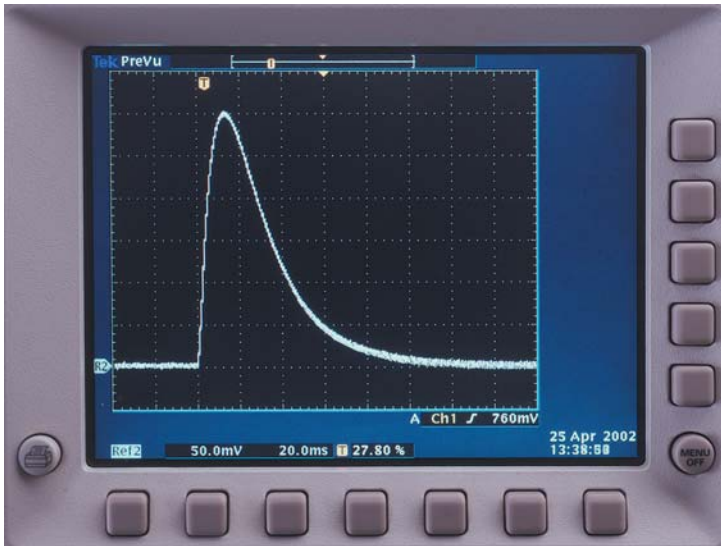
## Extended Low Frequency

The **CWT LF** from *Power Electronic Measurements Ltd.* features an extended low frequency bandwidth.

*This enables measurement of:*

- small currents at 50/60Hz
- sinusoidal currents with significantly lower phase shift and...
- long pulses of current with significantly lower values of droop than the CWT standard or mini ranges.

The **CWT LF** can be specified with either a standard or miniature coil.



8kA Capacitor discharge measured by CWT60LF and coaxial shunt - 20ms/div.

### Features

- Measuring ac currents **1A to 300,000A**
- Typical bandwidths from **0.1Hz to 6MHz**
- Very low 'droop' values
- Thin and flexible, 'clip-around' coil - **can be specified with either standard or mini coil** (see relevant specification sheet for more details)
  - ⇒ Easy to insert probe in confined spaces
  - ⇒ Non-intrusive – loading the circuit under test by only a few pH
- Instantaneous  $\pm 6V$  peak to peak output to plug directly into scope, data acquisition equipment, DVM or power recorders
- CE Marked



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## PERFORMANCE CHARACTERISTICS

Type	Sensitivity (mV/A)	Peak current (kA)	Peak di/dt (kA/μs)	Noise max <sup>1</sup> (mV <sub>pk-pk</sub> )	Droop typ. (%/ms)	LF (3dB) bandwidth typ. (Hz) $f_L$	Phase lead at 50Hz typ. (deg)	HF (3dB) bandwidth typ. (MHz) $f_H$ *2	
								Coil Length 300mm	Coil Length 700mm

### Standard Coils

CWT03LF	100.0	0.06	0.4	15.0	4.6	5.1	8.3	6.5	3.0
CWT06LF	50.0	0.12	0.8	15.0	2.3	2.6	4.2	6.5	3.0
CWT1LF	20.0	0.3	2.0	15.0	1.0	1.0	1.8	6.5	3.0
CWT3LF	10.0	0.6	4.0	15.0	0.5	0.55	0.85	6.5	3.0
CWT6LF	5.0	1.2	8.0	15.0	0.25	0.27	0.45	6.5	3.0
CWT15LF	2.0	3.0	11.0	15.0	0.1	0.11	0.18	6.5	3.0
CWT30LF	1.0	6.0	11.0	15.0	0.05	0.055	0.09	6.5	3.0
CWT60LF	0.5	12.0	11.0	15.0	0.025	0.022	0.045	6.5	3.0
CWT150LF	0.2	30.0	11.0	15.0	0.01	0.011	0.018	6.5	3.0
CWT300LF	0.1	60.0	11.0	10.0	0.007	0.008	0.012	6.5	3.0
CWT600LF	0.05	120.0	11.0	5.0	0.007	0.008	0.012	6.5	3.0
CWT1500LF	0.02	300.0	11.0	4.0	0.007	0.008	0.012	10.0	5.0

### Miniature Coils

								Coil Length	Coil Length
								100mm	200mm
CWT03LF	100.0	0.06	0.4	16.0	10.2	11.0	18.6	5.0	4.0
CWT06LF	50.0	0.12	0.8	16.0	5.1	5.6	9.3	12.0	7.5
CWT1LF	20.0	0.3	2.0	15.0	2.2	2.3	4.0	12.0	7.5
CWT3LF	10.0	0.6	4.0	15.0	1.0	1.1	1.7	12.0	7.5
CWT6LF	5.0	1.2	8.0	15.0	0.5	0.55	0.85	12.0	7.5
CWT15LF	2.0	3.0	14.0	15.0	0.2	0.22	0.35	12.0	7.5
CWT30LF	1.0	6.0	14.0	15.0	0.1	0.11	0.18	12.0	7.5
CWT60LF	0.5	12.0	14.0	15.0	0.05	0.055	0.09	12.0	7.5
CWT150LF	0.2	30.0	14.0	15.0	0.02	0.022	0.035	12.0	7.5
CWT300LF	0.1	60.0	14.0	15.0	0.01	0.011	0.018	12.0	7.5
CWT600LF	0.05	120.0	14.0	10.0	0.007	0.008	0.012	12.0	7.5

<sup>1</sup> Distributed around the  $f_L$  (-3dB) bandwidth.

<sup>2</sup> For 2.5m cable length. Contact PEM for values of  $f_H$  for other coil and cable lengths

**TYPICAL ACCURACY** Calibrated to **UKAS ±0.2%** with conductor central in the loop  
Variation with conductor position in the coil loop typically ±1% for STANDARD COILS  
Variation with conductor position in the coil loop typically ±2% for MINIATURE COILS

**TYPICAL LINEARITY** ±0.05% (Full Scale)

<b>ABSOLUTE MAXIMUM</b>	(Standard coil)	<b>PEAK</b> 11.0	<b>RMS</b> 0.8 @ 70°C
<b>VALUES OF di / dt</b> (kA/μs)	(Miniature coil)	<b>PEAK</b> 14.0	<b>RMS</b> 0.85 @ 70°C
(value must not be exceeded)			(Further information available on request)

## COIL AND CABLE

Please refer to **CWT** and **CWT Mini** specification sheets for details about

- Coil length/Peak coil insulation voltage
- Cable length between Rogowski coil and integrator

## INTEGRATOR

### ④ POWER SUPPLY

**B** Battery 4 x AA (1.5V standard alkali batteries)  
**-plus-**  
2.1/2.5mm socket for 12 to 24V (±10%) DC input

Typical life 70hrs  
Battery inoperative with DC supply present

**R** 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

⑤ **INTEGRATOR BOX DIMENSIONS** H = 183mm, W = 93mm, D = 32mm

⑥ **OUTPUT SOCKET** BNC (output impedance 50Ω - unit supplied with 0.5m BNC - BNC coaxial cable)

**MIN. OUTPUT LOADING** 100kΩ (for rated accuracy)

**TEMPERATURE RANGE** 0°C to 40°C

## ORDERING

Type + Power supply

Cable Length

Coil Circumference

Insulation

e.g. order code

**CWT30LF R**

**4**

**100 M**

**2**

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