Wideband current probes and current measurement

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A wide range of rugged **clip around flexible coil** current probes using the Rowgowski principle for high bandwidth measurement and faithful conversion of current to voltage, intended for use with oscilloscopes, data loggers and power analyzers. All models are available with a variety of clip-around coil sizes to suit most conductors allowing easy current monitoring even where access is limited

- **Bandwidth 1Hz to 13 MHz (15MHz using CWT mini range)**
- **LF option available for signals less than for 1Hz**
- **1Hz to 1MHz models available (RGF range)**
- **Models covering a 10A - 300,000Amps range**
- **10kV Insulation capability**
- **Flexible "clip-around" coil**
- **±6V Instantaneous output for scope or power analyzer**
- **CE marked**

Application	Typical uses
Power analyzers	Inexpensive method of extending the current, power and harmonic measurement range without bandwidth degradation
Motor drives and power electronic convertors	Allows measurement of gate turn on / turn off times and peak current
Motors and generator	Easy retrospective installation of probes around conductors where regular clamp and split core CTs are unsuitable

Induction heating	Measurement of high current / high frequency signals, including high order harmonic effects
Pulsed power applications	Semiconductor switches, capacitor discharge and circuit breaker interruption currents

Selection table for CWT range

CWT Specifications

Type	**Sensitivity** (mV/A)	**Peak current** (kA)	**Peak di/dt** (kA/µS)	**Offset drift max.** (mA/^{o}C)	**Noise max**[*1] (A_{pk-pk})	**Droop** typ. (%/ ms)	**LF (3dB) bandwidth** typ. (Hz) f_L	**Phase lead at 50Hz** typ. (deg)	**HF (3dB) bandwidth** typ. (MHz) f_H [*2]
CWT1	20.0	0.3	2.0	3.0	0.075	44	50	2.0 @ 2kHz	10.0
CWT1R	20.0	0.3	2.0	5.0	0.075	22	25	2.0 @ 1kHz	5.0
CWT3	10.0	0.6	4.0	60	1.0	3.5	4.0	1.0 @ 300Hz	10.0
CWT3R	10.0	0.6	4.0	140	1.5	1.1	1.2	1.8	5.0
CWT15	2.0	3.0	20.0	180	3.5	0.8	1.0	1.5	10.0
CWT30	1.0	6.0	25.0	360	5.0	0.6	0.7	1.0	10.0
CWT60	0.5	12.0	25.0	700	7.0	0.4	0.5	0.8	10.0
CWT150	0.2	30.0	25.0	700	7.0	0.7	0.8	1.2	10.0
CWT300	0.1	60.0	25.0	1000	10.0	0.5	0.6	0.9	10.0
CWT600	0.05	150.0	25.0	2000	20.0	0.3	0.4	0.6	10.0
CWT1500	0.02	300.0	25.0	5000	50.0	0.2	0.3	0.4	10.0

[*1]. Distributed around the f_L (3dB) bandwidth. Additional 50/60Hz noise of approximately 2mVpk-pk applies with AC 115V and 230V supplied CWT

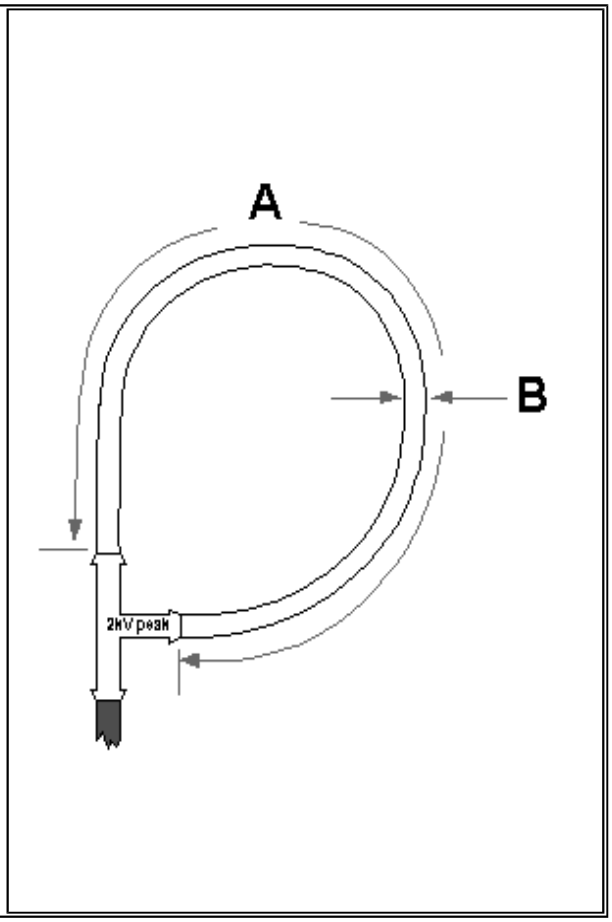
[*2]. The high frequency bandwidth is in part dependent on coil length. The values given are for a 700mm coil, a 300 –or- 500mm coil will have a higher f_H

TYPICAL ACCURACY (full scale)	Calibrated to **UKAS** ±0.2% with conductor central in the loop Variation with conductor position in the coil loop typically ±1%				
TYPICAL LINEARITY	±0.05% (full scale)				
ABSOLUTE MAXIMUM	**CWT1R / 3R**	**PEAK**	12.5	**RMS**	

VALUES OF *di* / *dt* (kA/µs) (value must not be exceeded)	**all other CWT's**	**PEAK**	25.0	**RMS**	0.7 @ 70°C 1.0 @ 70°C (Further information available on request)

Coil and cable

COIL CIRCUMFERENCE 'A' (mm)	300 -or- 500 –or- 700 –or- 1000
COIL CROSS SECTION 'B' (mm) (dependent on "Peak coil voltage isolation" see below)	7.0 (2kV insulation) 8.0 (5kV insulation) 9.0 (10kV insulation) 14.0 (2kV insulation with 10kV sleeve)
PEAK COIL VOLTAGE ISOLATION (kV)[*3.]	2 -or- 5 -or- 10
[*3.] Safe peak working voltage to earth. 5kV coils are flash tested at 8kVrms and 10kV coils or 2kV coils with 10kV sleeve at 15kVrms for 60 seconds.	
TEMPERATURE RANGE (°C) [*4.]	-20 to 100
[*4.] For de-rating due to temperature cycling please consult PEM	
CABLE LENGTH (metre) (from box to coil)	2.5 or 4



Power input - mechanical - environmental

POWER SUPPLY		All CWT units are supplied with two 9V PP3 Lithium batteries (typical life 90 hours) and a 12Vdc input Power adaptors (AC to 12Vdc) are available for connection to 230Vac or 115Vac. Options **- 230** or **-115** Rechargeable batteries, option **R**, are available. (batteries are charged whenever external ac / dc supply is present). Typical recharge time 40 hrs, typical life 8 hrs.
BOX DIMENSIONS (mm)		H=120, W=65, D=35 (ac, dc supply versions) H=112, W=62, D=27 (battery supply version)
OUTPUT CABLE		0.5m 50 ohm BNC cable
MIN. OUTPUT LOADING		100kohm (for rated accuracy)
TEMPERATURE RANGE (°C)		0 to 50 (battery versions)

	-10 to 55 (ac / dc versions)

Ordering	**Type + ac adaptor** CWT unit is supplied with 12Vdc input as standard. If required, add adaptor option:- 115Vac or 230Vac	/	**Cable length**	/	**Coil circumference**	/	**Insulation**
e.g. order code	**CWT30 -230**	/	**2.5**	/	**700**	/	**5**

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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