

High Current Wideband AC Measuring Transformer

Measuring power electronics
at medium and high frequencies



Main applications:

- Plasma excitation
- Laser excitation
- Ultrasonic excitation
- Induction heating
- Induction cooking
- High speed spindles
- Avionic power supplies (including harmonic analysis up to 150kHz)
- CE-Harmonic analysis over 16A (e.g. EN61000-3-12)

WCT100/WCT1000

High Current Wideband AC Measuring Transformer WCT100/WCT1000

Precision Power Meters need Precision Current Sensors – in wideband and high current performance for the power electronics applications. For this ZES ZIMMER has been developing and manufacturing the current transformer series WCT – WCT100 up to 100A, WCT1000 up to 1000A with a frequency range from 30Hz to 1MHz as an outstanding feature.

Usually, standard CTs and clamps have only a few kHz bandwidth. There is really a gap in

the market for accurate high current sensors without any slew rate limitation but at the same time with high bandwidth and a minor phase shift.

The new WCT100 from ZES ZIMMER has a guaranteed accuracy with max. 0.25% amplitude error from 30Hz to 100kHz (and an error smaller 2% from 100kHz up to 1MHz). For precision power measurement their low phase error of 0.3° is essential.

The design of WCT is a passive one, that means no auxiliary supply is needed and therewith improved reliability is achieved. The WCTs are optimised for the ZES ZIMMER Power Meter LMG500 and especially for its I_{HF} input. The low and overall impedance of its measuring input yield best accuracy.

The WCTs also fit best with the ZES ZIMMER Power Meter LMG95.

Specifications

	WCT100	WCT1000 (preliminary)
Nominal Input Current	100A	1000A
Measuring Range	250A _{pk}	2500A _{pk}
Transformer Ratio	100A:1A	1000A:1A
Maximum Input	120A continuous, 200A for 1 minute	1200A continuous, 2000A for 1 minute
Bandwidth	30Hz ... 1MHz	30Hz ... 1MHz
Output Burden	max. 100mΩ for the specified accuracy	max. 500mΩ for the specified accuracy
Isolation	600V CATIII, 1000V CATII, test voltage output I to 20mm busbar (for higher voltages, the primary lead has to be isolated according to the working voltage of the system!)	
Output Connection	Safety sockets, 4mm	Safety sockets, 4mm
Temperature Range	-10 ... +70°C	-10 ... +70°C
Through Hole Diameter	23mm	46mm
Weight	about 350g	3000g
Dimensions	L 120mm x W 95mm x H 65mm	L 190mm x W 170mm x H 160mm
Order No.	LMG-Z601	LMG-Z602

Accuracy

Frequency range	30Hz to 100Hz	100Hz to 100kHz	100kHz to 300kHz	300kHz to 1MHz
Current ±(% of measuring value)	0.25%	0.25%	1%	2%
Phase ±(phase error in degree)	0.6°	0.3°	0.4°	0.6°

Specification is valid for small signal as well as for wide signal level

Use LMG-Z601 and LMG specifications to calculate the accuracy of the complete system

Subject to technical changes, especially to improve the product, at any time without prior notification.