ZES ZIMMER Electronic Systems

# Precision Current Transducer Series PSU


- Precise measurement of low and high currents 0.1 A up to 25000 A
- High dynamic ranges through excellent linearity and very low temperature coefficient (0.5ppm/°C)
- Zero flux transducer with extremely stable zero point, lowest noise and high bandwidth DC to < 500kHz
- Approved and adapted to expand precision power measuring ranges of ZES ZIMMER LMG series

„Plug N' Measure"

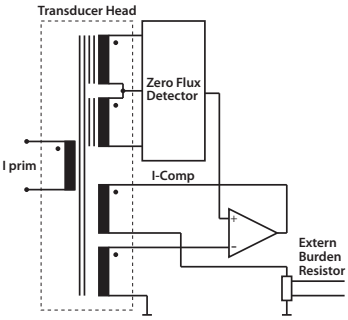
# Precision power meters need precision sensors

In 1994 ZES ZIMMER has recognised the capabilities of Precision Current Transducers for precision power metering. ZES ZIMMER introduced the Precision Current Transducers series PSU as essential accessory for power meters. In the following years other competitors one by one have adopted the same Current Transducers as „innovation“ in their delivery programmes. The ZES ZIMMER precision power meter can measure currents and voltages by use of its normal inputs in a very wide, but naturally limited magnitude range. To measure currents above many types of current transducers are possible. To obtain the best for the performance class of the ZES ZIMMER LMG precision power meter, only few transducers are recommended. For mains application (50Hz to 400Hz) passive current transformers class 0.02 are suitable. At other frequencies (including DC) the Precision Current Transducer Series PSU is the adequate choice. Not only the amplitude of current and voltage has to be transferred precisely, also the delay of each current input in respect to its voltage channel must be kept constant over the whole frequency range to prevent errors in power measurement.

# High dynamic range through optimised burden adapter

The transducer mode of operation and its highest quality zero flux detector guarantees an extremely stable zero point for accurate DC measurements, excellent linearity for very high dynamic range and high bandwidth for inverter applications. It is the best precision current transducer in the market.
With the primary current conductor through the transducer head centre hole and current flowing, the electronics will generate a current in the built-in compensation winding counter-balancing the primary ampere turns. A very sensitive and extremely low noise detector circuit will sense, when zero flux is obtained, and the compensating current is accordingly set. Most of the PSU units are equipped with an adaptation connector to the LMG unit including a matched burden resistor optimised for the sensor input of the ZES ZIMMER LMG precision power meter. High dynamic range of transducer and high dynamic range of the LMG precision power meter both are brought together. The adaptation connector also contains an EEPROM with scaling and adjustment data.

A real “Plug N’ Measure” device.




# Technical Data/Selection Guide

| | | | PSU200 | PSU400 | PSU600 | PSU700 | PSU2000 | PSU5000 |
|---|---|---|---|---|---|---|---|---|
| Max. input current/ Measuring range | | Apk | 200 | 400 | 600 | 700 | 2000 | 5000 |
| Current transfer ratio | | | 1000 | 2000 | 1500 | 1750 | 2000 | 2500 |
| Maximum output current | | Apk | 0.2 | 0.2 | 0.4 | 0.4 | 1 | 2 |
| Current measure by | Sensor input | | via Adapter to LMG sensor input | | | | via LMG current input | |
| LMG500[1)] | 0.03V-4V | Apk | 0.3 to 200 | 0.6 to 400 | 0.9 to 600 | 1 to 700 | 22 to 2000 | 56 to 5000 |
| LMG450[1)] | 0.12V-4V | Apk | 1.2 to 200 | 2.5 to 400 | 3.7 to 600 | 4.4 to 700 | 750 to 2000 | 935 to 5000 |
| LMG95 with BUR15[1)] | 0.03V-4V | Apk | 1.2 to 200 | 2.4 to 400 | 1.8 to 600 | 2.1 to 700 | 190 to 2000 | 235 to 5000 |
| Bandwidth DC to | | kHz | 100 | | | | 100 | 50 |
| Accuracy (DC to 2500Hz) | | | ±(0.015% of measuring value+0.005% of measuring range PSU) | | | | | |
| Sensor supply | | | Supply unit | | | | | |
| LMG500 | | | None, internally by LMG500 | | | | PSU-S20 | PSU-S50 |
| LMG450 | | | SSU4 | | | | | |
| LMG95 with BUR15 | | | None, internally by LMG95 | | | | | |
| Conductor Hole (Ø x length) | | mm | 26 x 47 | 26 x 47 | 26 x 60 | 30 x 67 | 50 x 70 | 62 x 104 |
| Transducer electronics | | | Integrated in sensor head | | | | Eurocard module built in supply unit | |
| Power requirement | | | ±15V, ±270mA | ±15V, ±270mA | ±15V, ±600mA | ±15V, ±470mA | ±15V, ± 1.3A | ±15V, ± 2.6A |
| Dimensions (Head) HxWxL | | mm | 77x93x47 | 77x93x47 | 127x98x60 | 106x128x67 | 200x165x72 | 250x250x164 |
| Weight (Head) | | kg | 0.3 | 0.3 | 1 | 0.8 | 3.5 | 12 |
| Dimensions (Supply unit) | | mm | 60x320x307 | | | | 19“ rack, 3HU | |
| Temperature range | | | +10°C to +50°C | | | | 0°C to +60°C (Head) | |
| Degree of pollution | | | 2 | | | | | |
| Isolation | | | Test voltage (output to busbar) 5kV AC | | | | | |
| | | | | | | | | |
| [1)] Minimum current is defined with 20% peak value of lowest range | | | | | | | | |

Further transducers up to 25000A available



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