Voltage Sensors Board (SCS-SB-0400)

Description:

SCS-SB-0400 is our standard maximum 4 channel LEM based voltage sensors board that is suitable for all your accurate voltage sensing needs in different power converters. With on board isolated supply, it ensures safety and provides excellent linearity. This board can also be provided with less than four numbers of voltage sensors as per requirements and modified sensors board can also be developed.

Product Details:

AC/DC universal voltage sensors board
Both Uni-polar as well bi-polar sensors output available
On board isolated power supplies
Requires 1ph – 230Vac supply for operation, max current consumption < 100 mA
Ambient operating temperature: 0 to 70 °C
Suitable connectors for easy input and output connection
Green led indication for power on
Excellent accuracy and linearity
Thermal and noise optimised PCB design

Voltage Sensors:

Max. 4 onboard voltage sensors
Maximum voltage sensing up to 600 V
Bi-polar output between -5 to 5 volts
Uni-polar output between 0 to 3 volts
Closed loop (compensated) voltage transducer using the Hall-effect
Offset current @zero input, TA = 25 °C < ±0.15 mA

RMS voltage for AC insulation test, 50 Hz, 1 min – 4.2 kV
Impulse withstand voltage 1.2/50 µs – 16 kV
Creepage distance – 19.5 mm
all values for voltage sensor module only

Application:

Our standard voltage sensors board is generalized and can be used for any application whether AC or DC voltage sensing and have frequency bandwidth of 200kHZ, some of the targeted applications are,
Power Converters
Electrical Drives
Laboratory R&D purposes
SMPS
Testing purposes

Connection Details:

Power supply to board on transformer input side: 1 phase, 230V
Input voltage on sensors module
Please make correct connection as per polarity marked on connectors
Zero offset output on pins Va, Vb, Vc, Vd and GND
Output with 1.5 Volts offset on pins Vao, Vbo, Vco, Vdo and GND

Gain calculations:

Input RMS value: Ki

Output RMS value: Ko

Gain = Ki/Ko

Take three different readings and then average for better accuracy. Please use sensors near to its rated voltages values to have proper linearity.

Please use appropriate range of volt-meter/multi-meter to have accurate readings, use DC range for DC measurements and AC range for AC measurements

To obtain original wave shape in microcontroller/DSP/FPGA/DSPACE:

Without offset on pins Va, Vb, Vc, Vd and GND – Simply, multiply ADC o/p with the Gain value.

With offset 1.5 Volts on pins Vao, Vbo, Vco, Vdo and GND – First subtract 1.5 from the ADC o/p and then multiply with Gain value.