AN_130KIT - Asahi EQ-730L Hall Sensor
Gapped Core, Open Loop, Current Sensor Application

General Description
The AN_130KIT provides an easy method of evaluating the Asahi EQ-730L Linear Hall sensor IC in a “gapped core” current sensor application. The AN_130KIT includes the Asahi EQ-730L linear IC mounted in the nominal 1.25mm wide gap cut into a 10mm x 6mm x 4mm Ferrite core. This configuration produces a nominal output sensitivity of 120mV/A. The full scale current range is 12Arms or 17A peak. The kit includes a +5V regulator, however the circuit will work down to 2.7VDC. With the input voltage below 5V, the Hall IC supply is no longer regulated and the sensitivity, supply current and full scale output range will reduce by an amount directly proportional to the supply voltage. For example; at 3V, the sensitivity is 3/5 of 120mV/A will be equal to 73mV/A

The Asahi EQ-730L has a very fast response time, < 5μS, thereby making it very useful for over current applications. The Asahi EQ-730L broadband output noise characteristic is low, < 5mVpp, to give an operating range of about 2000mV/2.5mV or about 800:1.

Included in the kit is a mating connector

Features
- Measures AC or DC currents in wires up to 14AWG
- Nominal Sensitivity: 120 ±35 mV/A for 5V Supply and 73 ±22 mV/A for 3V Supply
- (EQ-730L Magnetic Sensitivity of 130 ±30 mV/mT)
- Nominal Quiescent Output Voltage: 2.5V +/- 0.20V @ Iprimary = 0A
- Fast response time: <5μS
- Wide bandwidth: DC to 300kHz (-3dB)
- Low noise:< 5mVpp
- Large Dynamic range > 800:1
- Full scale output linear of 2.5V +/- 2.0V (With input supply voltage of 5.0 to 15VDC)
- Supply current: ≈ 8mA
- Supply voltage range of 2.7V to 15V (Below 5.0V, the voltage to the EQ-730L is unregulated)
- Galvanic isolation between primary conductor and sensor
- Interface Connector - 4 Pin 0.100” centers (Mating connector included)
- Bi-directional sensing
- Regulated Voltage Output (+5V) Pin (available for external use- up to 20mA)

AN_130KIT Electrical Block Diagram

References:
Hall IC Specification EQ-730L
Ferrite Core Specification T 22G 10 06 04-02
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Schematic, AN_130KIT

Parts List, AN_130KIT

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