24-Bit ADC with Built-in Load-cell Power Switch

DESCRIPTION

Based on Avia Semiconductor's patented technology, HX710C is a precision 24-bit analog-to-digital converter (ADC) with built-in load-cell power switch to reduce load-cell power consumption when the weigh scale is in sleep state. It's designed for weigh scales and industrial control applications to interface directly with a bridge sensor.

The input low-noise amplifier (PGA) has a fixed gain of 128, corresponding to a full-scale differential input voltage of ±20mV, when a 5V reference voltage is connected to the VREF pin. On chip oscillator provides the system clock without any external component. On-chip power-on-reset circuitry simplifies digital interface initialization. There is no programming needed for the internal registers. All controls to the HX710C are through the pins.

FEATURES

- **On-chip load-cell power switch with typical "on" resistance less than 1Ω (Vdd=5V)**
- **On-chip low noise amplifier with a gain of 128**
- **On-chip oscillator requiring no external component**
- **On-chip power-on-reset**
- **Simple digital control and serial interface: pin-driven controls, no programming needed**
- **Selectable 10SPS or 40SPS output data rate**
- **Simultaneous 50 and 60Hz supply rejection**
- **Current consumption: normal operation: 1.2mA, power down: < 1uA**
- **Operation supply voltage range: 2.6 ~ 5.5V**
- **Operation temperature range: -40 ~ +85℃**
- **8 pin SOP-8 package**

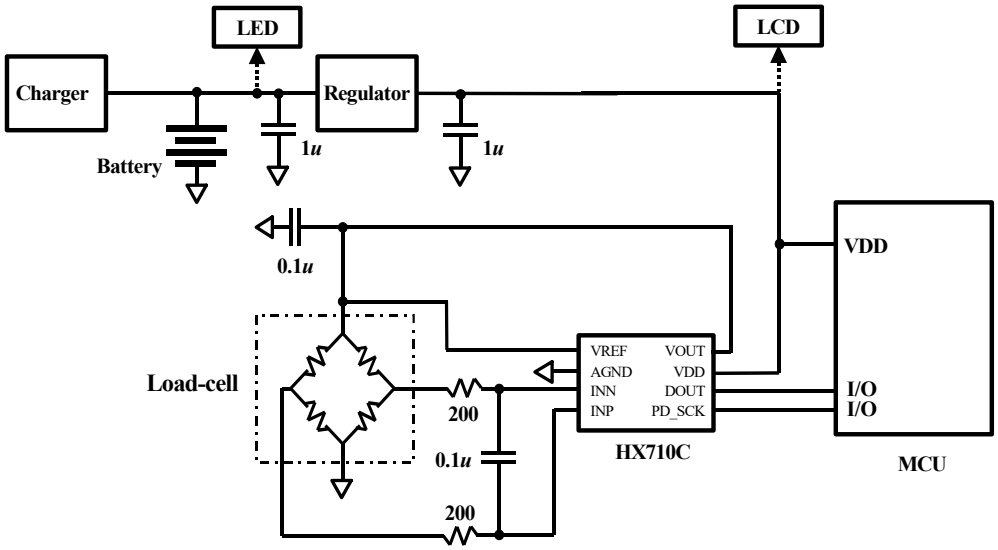

Fig. 1 Typical weigh scale application circuit using HX710C