**Product Overview**

The NSA5311 is a programmable analog signal conditioner with fast response for bridge sensors. The core of the NSA5311 is a low offset, no drift, fast response front-end PGA with programmable gain from 1.67 to 960 followed by an offset compensation DAC, a gain adjustment DAC and a output buffer. An optional square circuit could be applied to circuit to calibrate out 2nd nonlinearity of the sensor output. The NSA5311 has 2-times programmable NVM array which can be programmed by the specified one-wire interface (OWI). With the on-chip temperature sensor, look-up table logic, voltage reference, the NSA5311 can calibrate the 2nd nonlinearity, sensor offset, sensitivity and temperature drift, without the cost overhead with trimming by laser or external components. Once calibrated, the pin VOUT can provide a selectable absolute or ratio-metric analog output.

**Key Features**

- **Bridge sensor conditioner with analog output**
- **Sensor Error Calibration of Offset, Sensitivity and Temperature Drift**
- **Sensor 2nd order Nonlinearity Calibration**
- **High Frequency Response**
- **Ratio-metric or Absolute Output**
- **Internal or External Temperature Sensing**
- **Calibration Loop-up Table Logic with NVM**
- **Internal Precision Reference**

- **Sensor Fault Diagnostics with clamper**
- **3V~5.5V Operation**
- **-40°C~125°C Operational**
- **One-wire Interface**

**Available Supports**

- **Evaluation kit with calibration procedure for fast user design**
- **Support for mass calibration**
- **Quick circuit customization possible**

**Applications**

- **Magnetic sensor conditioner**
- **Pressure sensor conditioner**
- **Industry process control**