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# Low Cost, Single-Axis PSI5-Compatible Satellite Sensor

### **Data Sheet**

### **FEATURES**

User configurable sensor range: ±30 g, ±60 g, ±120 g, ±240 g, ±480 g Compliant with PSI5 Communication Protocol Version 1.3 Asynchronous operation: PSI5-A10P-250[228]/1L Synchronous operation: PSI5-P10P-500/3L and others Daisy-chain operation with bidirectional communication 10-bit sensor data 0.25 µs data interpolation routine User-selectable, continuous auto-zero operation Electromechanical sensor self-test High resistance to EMI/RFI/BCI 4.5 V to 16.5 V operation Electronic serial number Qualified for automotive applications

#### **APPLICATIONS**

Front impact crash sensing Side impact crash sensing Shock and vibration detection Pedestrian collision sensing

## ADXL185B/ADXL189B

#### **GENERAL DESCRIPTION**

The ADXL185B z-axis sensor and the ADXL189B x-axis sensor are *g* range configurable, integrated single-axis satellite sensors, compliant with the PSI5 Version 1.3 specification. The ADXL185B/ ADXL189B enable low cost solutions for front and side impact airbag satellite sensor applications. Acceleration data is sent to the control module via a digital 2-wire current loop interface bus.

The sensor *g* range is configurable to provide full-scale ranges from  $\pm 30$  *g* to  $\pm 480$  *g*. The devices can also be configured to transmit data from multiple *g* ranges during predefined time slots, in accordance with the PSI5 specification. The devices transmit 10-bit acceleration data to the control module and can be configured to include either a 1-bit parity check or a 3-bit cyclic redundancy check (CRC). Each device has a unique electronic serial number.

The ADXL185B/ADXL189B are available in a 16-lead, narrow-body SOIC package with an exposed pad. The ADXL185B/ADXL189B are specified to operate over the full automotive temperature range of  $-40^{\circ}$ C to  $+125^{\circ}$ C.

#### FUNCTIONAL BLOCK DIAGRAM



For more information about the ADXL185B/ADXL189B, please contact the Analog Devices, Inc., Customer Interaction Center at http://www.analog.com/en/content/technical\_support\_page/fca.html to connect with a technical support specialist.

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### ADXL185B/ADXL189B

### NOTES



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Rev. Sp0 | Page 2 of 2