Low Cost, Single-Axis PSI5-Compatible Satellite Sensor

Data Sheet

ADXL185B/ADXL189B

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

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 ±30 *g* to ±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°C to +125°C.

FUNCTIONAL BLOCK DIAGRAM
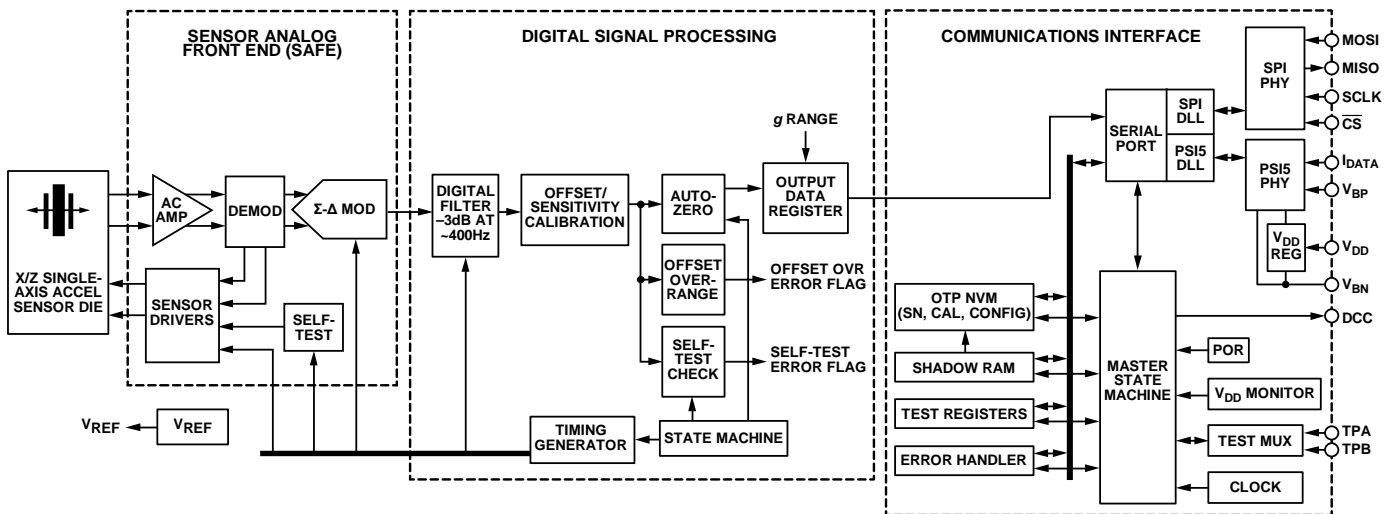

Figure 1.

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.

Document Feedback

NOTES

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