Freescale Semiconductor’s MPL115A series is a simple barometer with digital output (I²C/SPI) for cost-sensitive applications. A MEMS pressure sensor with a conditioning IC provides accurate pressure measurement. The MPL115A is offered in a 5 x 3 x 1.2 mm LGA package for space constrained applications. This surface mount package is RoHS-compliant. The MPL115A is ideal for battery and solar powered applications with its low current consumption at 1 μA in sleep mode and 5 μA in active mode.

The MPL115A enables altitude detection, weather changes and will increase data capacity in hard disk drives as well as providing absolute pressure measurement for industrial equipment.

**Target Applications**
- Barometry (portable and desk-top)
- Altimeter
- Weather stations
- Hard disk drives (HDD)
- Health monitoring
- Cooling fan control
- Dead reckoning assistance
- GPS navigation assistance
- Wound management
- Security and safety
- Ambient pressure switch
- Leak detection
- Vacuum equipment
Features

- Digital output options
  - MPL115A1 for SPI applications
  - MPL115A2 for I2C applications
- Low-profile 3 x 5 x 1.2 mm LGA package
- Low current consumption
  - Sleep mode: 1 μA
  - Active mode: 5 μA at one measurement per second
- Temperature and pressure coefficients available for temperature compensation
- Convenient pressure conversion in units of kilopascals (kPa)
- 50 to 115 kPa absolute pressure measurement range
- 1 kPa accuracy
- Operating temperature range from -40ºC to +105ºC
- 2.4 to 5.5 Volt power supply

Benefits

- Digital output simplifies system design with direct interface to microcontroller
- Small package enables design on space constrained PCB
- Low power consumption for battery and solar powered applications

Freescale is a leading provider of pressure, inertial and touch sensors and has offered MEMS-based sensors for over 30 years. The sensor ICs complement Freescale’s broad portfolio of ZigBee® technology, microcontrollers, microprocessors, digital signal processors, analog ICs and development tools to offer system solutions to customers.

### Selector Guide

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<th>Supply Current</th>
<th>Pressure Range</th>
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<td>MPL115A1T1</td>
<td>2.4–5.5V</td>
<td>5 μA</td>
<td>50–115 kPa</td>
<td>± 1 kPa</td>
<td>-20ºC to +85ºC</td>
<td>SPI</td>
<td>8-pin LGA</td>
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<tr>
<td>MPL115A2T1</td>
<td>2.4–5.5V</td>
<td>5 μA</td>
<td>50–115 kPa</td>
<td>± 1 kPa</td>
<td>-20ºC to +85ºC</td>
<td>I2C</td>
<td>8-pin LGA</td>
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### Development Tools

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<td>KITMPL115A1SPI</td>
<td>Evaluation board that demonstrates the SPI communication protocol</td>
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<td>KITMPL115A2I2C</td>
<td>Evaluation board that demonstrates the I2C communication protocol</td>
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<td>DEMOAPEXSENSOR</td>
<td>The APEX (Altitude Pressure EXperimental) board showcases how pressure sensors can be used to detect altitude at high resolution</td>
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### Documentation

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<td>AN3785</td>
<td>Using Digital Barometric Pressure Sensors in Your Design</td>
<td>Application note for I2C and SPI interface board implementation</td>
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<tr>
<td>AN3914</td>
<td>Modern Altimeter and Barometer System Using the MPL115A</td>
<td>Application note that describes a modern altimeter and barometer system</td>
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Learn More: For current information about Freescale products and documentation, please visit www.freescale.com/pressure.