

Fully-Differential Isolation Amplifier

Check for Samples: [AMC1200](#), [AMC1200B](#)

FEATURES

- **± 250 -mV Input Voltage Range Optimized for Shunt Resistors**
- **Very Low Nonlinearity: 0.075% max at 5 V**
- **Low Offset Error: 1.5 mV max**
- **Low Noise: 3.1 mV_{RMS} typ**
- **Low High-Side Supply Current: 8 mA max at 5 V**
- **Input Bandwidth: 60 kHz min**
- **Fixed Gain: 8 (0.5% accuracy)**
- **High Common-Mode Rejection Ratio: 108 dB**
- **3.3-V Operation on Low-Side**
- **Certified Galvanic Isolation:**
 - **UL1577 and IEC60747-5-2 Approved**
 - **Isolation Voltage: 4250 V_{PEAK} (AMC1200B)**
 - **Working Voltage: 1200 V_{PEAK}**
 - **Transient Immunity: 10 kV/ μ s min**
- **Typical 10-Year Lifespan at Rated Working Voltage (see Application Report [SLLA197](#))**
- **Fully Specified Over the Extended Industrial Temperature Range**

APPLICATIONS

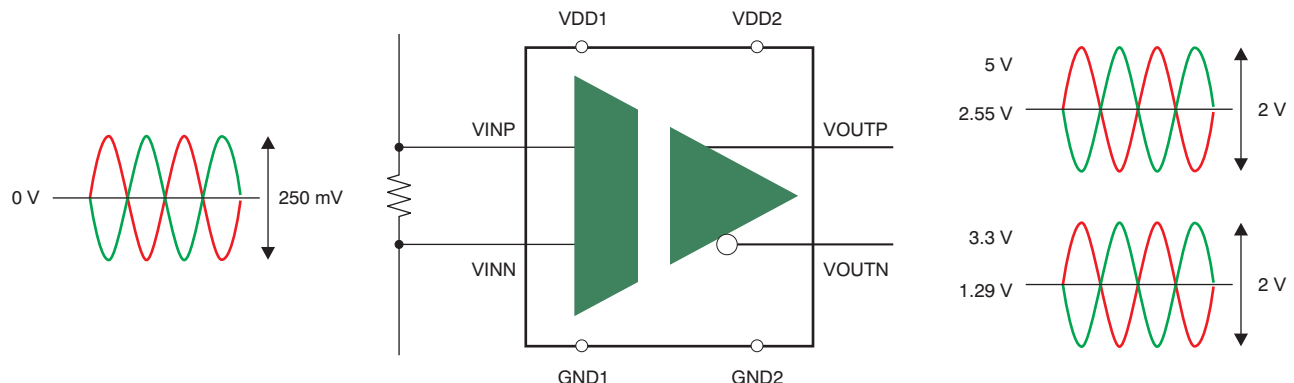
- **Shunt Resistor Based Current Sensing in:**
 - **Motor Control**
 - **Green Energy**
 - **Frequency Inverters**
 - **Uninterruptible Power Supplies**

DESCRIPTION

The AMC1200 and AMC1200B are precision isolation amplifiers with an output separated from the input circuitry by a silicon dioxide (SiO₂) barrier that is highly resistant to magnetic interference. This barrier has been certified to provide galvanic isolation of up to 4250 V_{PEAK} (AMC1200B) or 4000 V_{PEAK} (AMC1200) according to UL1577 and IEC60747-5-2. Used in conjunction with isolated power supplies, these devices prevent noise currents on a high common-mode voltage line from entering the local ground and interfering with or damaging sensitive circuitry.

The input of the AMC1200 or AMC1200B is optimized for direct connection to shunt resistors or other low voltage level signal sources. The excellent performance of the device supports accurate current control resulting in system-level power saving and, especially in motor-control applications, lower torque ripple. The common-mode voltage of the output signal is automatically adjusted to either the 3-V or 5-V low-side supply.

The AMC1200 and AMC1200B are fully specified over the extended industrial temperature range of –40°C to +105°C and are available in a wide-body SOIC-8 package (DWV) and a gullwing-8 package (DUB).



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