

# ADEMO141A/ADEMO141B

## Low-Noise Analog Integrator for use with PCB-Based di/dt Sensors

### FEATURES

- ▶ Single-supply operation: 2.97V to 3.63V
- ▶ User configurable integrator gain, ADEMO141A gain at 50Hz, using different feedback capacitor
  - ▶ 397.9,  $C_{FB} = 10\text{nF}$
  - ▶ 265.3,  $C_{FB} = 15\text{nF}$
  - ▶ 180.9,  $C_{FB} = 22\text{nF}$
  - ▶ 102.0,  $C_{FB} = 39\text{nF}$
- ▶ ADEMO141B gain at 50Hz, using different feedback capacitor
  - ▶ 49.7,  $C_{FB} = 10\text{nF}$
  - ▶ 33.2,  $C_{FB} = 15\text{nF}$
  - ▶ 22.6,  $C_{FB} = 22\text{nF}$
- ▶ Low noise
  - ▶ ADEMO141A:  $7.2\text{nV}/\sqrt{\text{Hz}}$  at  $f = 45\text{Hz}$  to  $65\text{Hz}$
  - ▶ ADEMO141B:  $18.8\text{nV}/\sqrt{\text{Hz}}$  at  $f = 45\text{Hz}$  to  $65\text{Hz}$

### APPLICATIONS

- ▶ Single-phase energy meters
- ▶ Polyphase energy meters
- ▶ Split-phase energy meters
- ▶ Power quality monitoring
- ▶ Protective devices
- ▶ Smart breakers
- ▶ EV chargers
- ▶ Machine health
- ▶ Smart power distribution units

For more details on the ADEMO141A/ADEMO141B, contact the local Analog Devices, Inc., sales office at [www.analog.com/sales](http://www.analog.com/sales).

### PIN CONNECTION DIAGRAM

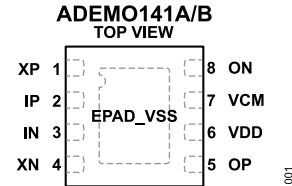


Figure 1. ADEMO141A/ADEMO141B Pin Configuration, 8-Lead LFCSP

### GENERAL DESCRIPTION

The ADEMO141A/ADEMO141B is a low-drift, low-noise, fully-differential amplifier which can be operated as an analog integrator, for use with a PCB-based di/dt current sensor and analog-to-digital converter (ADC). It has an output common-mode voltage of 1.2V and supply voltage of 3.3V. The analog integrator amplifies signal and cancels the frequency dependence of the current sensor.

The ADEMO141A/ADEMO141B has high gain, low noise, and excellent common-mode rejection ratio (CMRR) and power-supply rejection ratio (PSRR) specifications, which makes it ideal for high accuracy energy measurement applications. The ADEMO141A/ADEMO141B is specified over the extended industrial temperature ( $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ ), and is available in a 8-lead LFCSP.

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