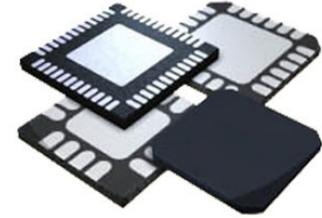



## Energy Measurement 40-Pin LFCSP EP Tray



Images are for reference only

[Inquiry](#)

<b>Manufacturer:</b>	<a href="#">Analog Devices, Inc</a>
<b>Package/Case:</b>	QFN
<b>Product Type:</b>	Discrete Semiconductor Modules
<b>RoHS:</b>	RoHS Compliant/Lead free 
<b>Lifecycle:</b>	Active

## General Description

The ADE7854A / ADE7858A / ADE7868A / ADE7878A are high accuracy, 3-phase electrical energy measurement ICs with serial interfaces and three flexible pulse outputs. The devices incorporate second-order  $\Sigma$ - $\Delta$  analog-to-digital converters (ADCs), a digital integrator, reference circuitry, and all signal processing required to perform total (fundamental and harmonic) active, reactive (ADE7858A, ADE7868A, and ADE7878A), and apparent energy measurement and rms calculations.

The ADE7878A can also perform fundamental-only active and reactive energy measurement and rms calculations. A fixed function digital signal processor (DSP) executes the signal processing. The DSP program is stored in the internal ROM memory.

The ADE7854A / ADE7858A / ADE7868A / ADE7878A can measure active, reactive, and apparent energy in various 3-phase configurations, such as wye or delta services, with both three and four wires. Aside from regular rms measurements, which are updated every 8 kHz, these devices measure low ripple rms values, which are averaged internally and updated every 1.024 sec. The devices provide system calibration features for each phase, that is, rms offset correction, phase calibration, and gain calibration.

The CF1, CF2, and CF3 logic outputs provide a wide selection of power information. All four devices provide total active and apparent powers, as well as the sum of the current rms values; the ADE7858A, ADE7868A, and ADE7878A also provide total reactive powers; the ADE7878A also provides fundamental active and reactive powers.

The ADE7854A / ADE7858A / ADE7868A / ADE7878A contain waveform sampling registers that allow access to all ADC outputs. The devices also incorporate power quality measurements, such as short duration low or high voltage detection, short duration high current variation, line voltage period measurement, and angles between phase voltages and currents.

Two serial interfaces, serial peripheral interface (SPI) and I2C, can communicate with the devices. A dedicated high speed interface, the high speed data capture (HSDC) port, can be used in conjunction with I2C to provide access to the ADC outputs and real-time power information.

The devices have two interrupt request pins, IRQ0 and IRQ1, to indicate that an enabled interrupt event has occurred. For the ADE7868A / ADE7878A, three specially designed low power modes ensure the continuity of energy accumulation when the ADE7868A / ADE7878A are in a tampering situation.

## Key Features

Highly accurate; supports EN 50470-1, EN 50470-3, IEC 62053-21, IEC 62053-22, and IEC 62053-23 standards

Compatible with 3-phase, 3- or 4-wire (delta or wye) meters and other 3-phase services

Supplies total (fundamental and harmonic) active, reactive, and apparent energy and fundamental active/reactive energy on each phase and on the overall system

0.1% error (typical) in active and reactive energy over a dynamic range of 1000 to 1 at>

0.2% error (typical) in active and reactive energy over a dynamic range of 3000 to 1 at>

Averaged rms measurements available in low ripple rms registers

Supports current transformer and di/dt current sensors

Dedicated ADC channel for neutral current input

Estimated neutral current measurement by calculating the rms of the sum of the phase currents in all 3 phases

See datasheet for additional features

## Recommended For You

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### AD7305BRZ

Analog Devices, Inc

SOP20

### AD9910BSVZ

Analog Devices, Inc

TQFP100

### AD9831ASTZ

Analog Devices, Inc

QFP

### AD5447YRUZ

Analog Devices, Inc

TSSOP

### AD5302BRMZ

Analog Devices, Inc

MSOP10

### AD5531BRUZ

Analog Devices, Inc

TSSOP16

### AD537JH

Analog Devices, Inc

CAN10

### AD652AQ

Analog Devices, Inc

DIP

### AD654JN

Analog Devices, Inc

DIP8

### AD7740YRMZ

Analog Devices, Inc

MSOP8

### AD9914BCPZ

Analog Devices, Inc

LFCSP

### AD73311ARSZ

Analog Devices, Inc

SSOP20

### AD7291BCPZ

Analog Devices, Inc

LFCSP20

### AD9954YSVZ

Analog Devices, Inc

QFP

### AD2S1205YSTZ

Analog Devices, Inc

LQFP44