

# Precision Data Converters



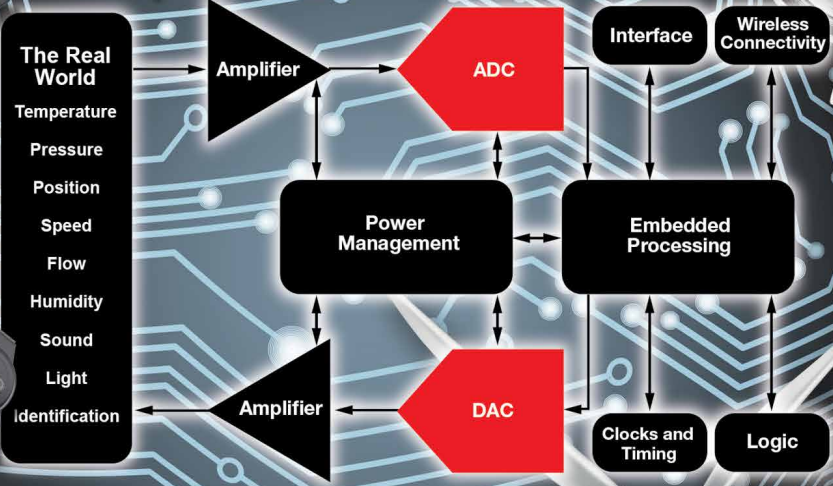
Industrial



Test and Measurement



Energy, Power, and Protection

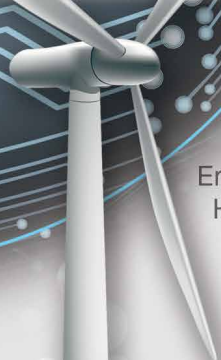


Consumer



Motor Control

Energy Harvesting



# Precision Data Converters

## Industrial Automation/Programmable Logic Control/Sensor Transmitters

**Applications:** Industrial Sensing, Programmable Logic Controllers, Industrial Weigh Scales, Industrial Automation/Process Control, and Test and Measurement Equipment.

Device	Res. (Bits)	Max Sample Rate (kSPS)	No. of Input Channels	Interface	V <sub>REF</sub>	Power Typ (mW)	Hardware Evaluation Tools	Package	Price*	
<b>Delta Sigma ADCs (Up to 125 kSPS)</b>										
<b>ADS1118</b>	16	0.86	4 SE/2 Diff	SPI	Int	0.5	ADS1118EVM	MSOP-10, QFN-10	2.30	
<b>ADS1120</b>	16	2	4 SE/2 Diff	SPI	Int/Ext	0.4	<b>ADS1120EVM</b>	TSSOP-16, QFN-16	3.15	
<b>ADS1146/47/48</b>	16	2	1/2/4 Diff	SPI	Int/Ext	1.4	ADS1148EVM-PDK	TSSOP-16/20/28	2.70/3.45/3.95	
<b>LMP90080/90079/90078/90077</b>	16	0.2146	4/4/2/2 Diff	SPI	Ext	2.8	LMP90100EB	TSSOP-28	2.72/2.58/ 2.45/2.33	
<b>ADS1220</b>	24	2	4 SE/2 Diff	SPI	Int/Ext	0.4	<b>ADS1220EVM</b>	TSSOP-16, QFN-16	3.95	
<b>ADS1246/47/48</b>	24	2	1/2/4 Diff	SPI	Int/Ext	1.4	ADS1248EVM-PDK	TSSOP-16/20/28	3.45/4.45/4.95	
<b>LMP90100/90097/90098/90099</b>	24	0.2146	4/2/2/4 Diff	SPI	Ext	2.8	LMP90100EB	TSSOP-28	3.33/2.86/ 3.01/3.17	
<b>ADS1252</b>	24	41	1 Diff/1 SE	SPI	Ext	40	—	SOIC-8	6.45	
<b>ADS1254</b>	24	20	4 Diff	SPI	Ext	4.36	—	TSSOP-20	7.17	
<b>ADS1255</b>	24	30	1 Diff/1 SE	SPI	Ext	36	—	TSSOP-20	6.96	
<b>ADS1258</b>	24	125	16 SE	SPI	Ext	42	ADS1258EVM-PDK	QFN-48	13.05	
<b>ADS1259</b>	24	14	1 Diff/1 SE	SPI	Int/Ext	13	ADS1259EVM-PDK	TSSOP-20	5.60	
<b>SAR ADCs (Pin-for-Pin Families)</b>										
Device	Res. (Bits)	Max Sample Rate (kSPS)	No. of input Channels	Interface	Input Voltage Range	V <sub>REF</sub>	Power Typ (mW)	Hardware Evaluation Tools	Package	Price*
<b>ADS8634/38</b>	12	1000	4 SE/8 SE	SPI	±10 V	Int/Ext	5.85/14.45	ADS8638EVM-PDK	VQFN-24, TSSOP-30	2.85/3.25
<b>ADS8508/ADS8509/ADS8519</b>	12/16/16	250	1 SE	SPI	±10 V	2.5V/2.5 V/ 4.096 V Int	70/70/110	ADS8519EVM	SOIC-20, SSOP-28	9.95/12.44/ 12.95
<b>ADS8860/2/4/6</b>	16	1000/680/400/100	1 SE	SPI	0-V <sub>REF</sub>	Ext	5.5/4.2/2.6/0.7	<b>ADS8860EVM-PDK</b>	MSOP-10, SON-10	10.00/8.00/ 6.50/5.00
<b>ADS8861/3/5/7</b>	16	1000/680/400/100	1 DE	SPI	±V <sub>REF</sub>	Ext	5.5/4.2/2.6/0.7	<b>ADS8861EVM-PDK</b>	MSOP-10, SON-10	11.00/9.00/ 7.50/5.50
<b>ADS8881/3/5/7</b>	18	1000/680/400/100	1 DE	SPI	±V <sub>REF</sub>	Ext	5.5/4.2/2.6/0.7	<b>ADS8881EVM-PDK</b>	MSOP-10, SON-10	19.95/14.95/ 10.95/7.95
<b>Precision DACs</b>										
Device	Res. (Bits)	No. of Output Channels	Output Type	Interface	Output Range	V <sub>REF</sub>	Power (mW)	Hardware Evaluation Tools	Package	Price*
<b>DAC161P997</b>	16	1	Current	SWIF	4-20mA	Ext	0.5	DAC161P997EVAL	SON-16, QFN-16	1.75
<b>DAC161S997</b>	16	1	Current	SPI	4-20mA	Ext	0.5	<b>DAC161S997EVM</b>	SON-16, QFN-16	1.75
<b>DAC081S101/DAC101S101/DAC121S101</b>	08/10/12	1	Voltage	SPI	0 - 5 V	Supply	0.63	DAC121S101CVAL	TSOT-6, MSOP-8	0.55/0.65/1.15
<b>DAC082S085/DAC102S085/DAC122S085</b>	08/10/12	2	Voltage	SPI	0 - 5 V	Ext	0.6	DAC122S085EB	LLP-10, MSOP-8	0.70/1.40/1.80
<b>DAC084S085/DAC104S085/DAC124S085</b>	08/10/12	4	Voltage	SPI	0 - 5 V	Ext	1.1	DAC124S085EB	LLP-10, MSOP-8	0.90/2.00/3.00
<b>DAC088S085/DAC108S085/DAC128S085</b>	08/10/12	8	Voltage	SPI	0 - 5 V	Ext	1.95	DAC128S085EB	LLP-16, TSSOP-16	1.50/3.44/5.25
<b>DAC5311/DAC6311/DAC7311/DAC8311/DAC8411</b>	8/10/12/ 14/16	1	Voltage	SPI	0 - 5 V	Supply	0.4	DAC7311EVM	SC-70	0.55/0.68/0.95/ 2.00/2.60
<b>DAC7562/DAC8162/DAC8562</b>	12/14/16	2	Voltage	SPI	0 - 5 V	Int/Ext	0.5	DAC7562EVM	MSOP-10, QFN-10	2.50/3.85/4.20
<b>DAC7716/DAC8234/DAC8734</b>	12/14/16	4	Voltage	SPI	-16.5 - 33 V	Ext	115	DAC8734EVM	QFN-48, TQFP-64	8.20/14.95/20.20
<b>DAC7718/DAC8218/DAC8718</b>	12/14/16	8	Voltage	SPI	-16.5 - 33 V	Ext	260	DAC8718EVM	MSOP-10, QFN-10	8.95/13.45/16.45
<b>DAC8411/8311/7311</b>	16/14/12	1	Voltage	SPI	0 - 5.5 V	Ext	0.14	DAC7311EVM	SC70-6	2.60/2.00/0.95
<b>DAC8564</b>	16	4	Voltage	SPI	0 - 5.5 V	Int/Ext	3.1	DAC8564EVM	TSSOP-16	5.95
<b>DAC8554</b>	16	4	Voltage	SPI	0 - 5.5 V	Ext	3	DAC8554EVM	TSSOP-16	5.78
<b>DAC8760/7760</b>	16/12	1	Current & Voltage	SPI	4-20mA, 0-20mA, 0-24mA	Int/Ext	125	<b>DAC8760EVM</b>	QFN-40, TSSOP-24	3.99/2.99
<b>DAC8750/7750</b>	16/12	1	Current	SPI	4-20mA, 0-20mA, 0-24mA	Int/Ext	125	<b>DAC7760EVM</b>	QFN-40, TSSOP-24	3.50/2.49
<b>Sensor Analog Front Ends (AFE)</b>										
Device	Application	Description	Software/Design Tools	Hardware Eval. Tools	Package	Price*				
<b>LMP91000</b>	Electrochemical Gas Sensing	Industry's first configurable single chip AFE potentiostat supporting >20 different electrochemical gas sensing applications	Sensor AFE WEBENCH <sup>®</sup>	LMP91000SDEVAL/NOPB	LLP-14	2.70				
<b>LMP91002</b>	Electrochemical Gas Sensing	Low cost, configurable single chip AFE for zero bias electrochemical sensors (H2S and CO)	Sensor AFE WEBENCH <sup>®</sup>	LMP91000SDEVAL/NOPB	LLP-14	1.80				
<b>LMP91200</b>	pH Sensing	Industry's first configurable single chip AFE supporting different pH sensors	Sensor AFE WEBENCH <sup>®</sup>	LMP91200EVAL/NOPB	TSSOP-16	2.50				
<b>LMP91050</b>	NDIR Gas Sensing	Industry's first configurable single chip AFE supporting different NDIR gas sensors	Sensor AFE WEBENCH <sup>®</sup>	LMP91050SDEVAL/NOPB	MSOP-10	1.25				
<b>LMP91051</b>	NDIR Gas Sensing	Industry's first configurable single chip AFE supporting different NDIR gas sensors	Sensor AFE WEBENCH <sup>®</sup>	LMP91051EVM	MSOP-10	1.45				

\*Suggested resale price, for single channel, in U.S. dollars in quantities of 1,000.

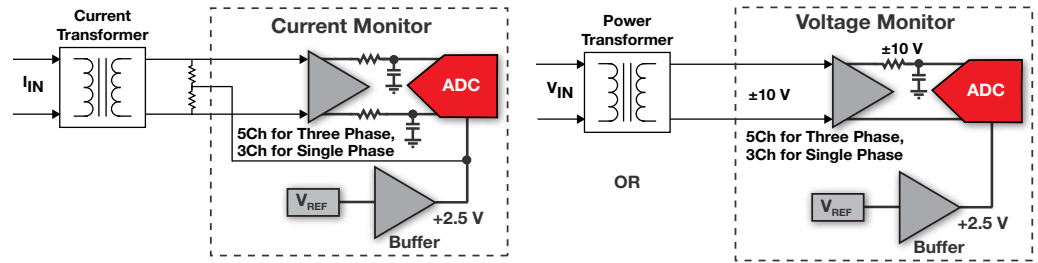
Preview products are listed in **bold blue**. New products are listed in **bold red**.

# Precision Data Converters

## Energy

### Applications

- E-Metering
- Power Measurement
- Smart Grids
- Protection Relays
- Motor Control
- Power Inverters



Device	Peak Isolation (V)	Res. (Bits)	Modulator Frequency (MHz)	No. of Input Channels	Interface	Input Voltage Range	V <sub>REF</sub>	Power (mW)	Evaluation Tools	Package	Price*	
<b>Isolated Modulators for Current Shunt Measurements</b>												
AMC1203	4000	16	10	1 Diff	Serial Bit Stream	±280 mV	Int	80	AMC1203EVM	SOIC-16, SOP-8	3.35	
AMC1204/1204B	4000/4250	16	20	1 Diff	Serial Bit Stream	±250 mV	Int	61.6	AMC1204EVM	SOIC-16	3.45/3.45	
<b>Isolated Amplifiers for Current Shunt Measurements</b>												
Device	Peak Isolation (V)	Input Bandwidth (kHz)	Fixed Output Gain	Input Voltage Range	Power (mW)	Evaluation Tools	Package	Price*				
AMC1200/1200B	4000/4250	60	8	±250 mV	38.4	AMC1200EVM, TINA Model	SOP-8	2.20/2.20				
AMC1100	4000	60	8	±250 mV	38.4	AMC1100EVM, TINA Model	SOP-8	1.80				
<b>ADCs for Power Measurement (Protection Relays, E-Metering, Smart Grid, Solar Inverters, etc.)</b>												
Device	Res. (Bits)	Max Sample Rate (kSPS)	No. of Input Channels	Interface	Input Voltage Range	V <sub>REF</sub>	Power (mW)	Evaluation Tools	Package	Price*		
ADS7253/7853/8353	12/14/16	1000/1000/700	2 SE	SPI	0 - 2*V <sub>REF</sub>	Int/Ext	45	ADS8353EVM-PDK	QFN-16, TSSOP-16	3.50/6.00/9.00		
ADS7254/7854/8354	12/14/16	1000/1000/700	2 DE	SPI	±2*V <sub>REF</sub>	Int/Ext	45	ADS8354EVM-PDK	QFN-16, TSSOP-16	4.00/6.50/9.50		
ADS7223/7263/8363	12/14/16	1000	8 SE/4 Diff	SPI	±2.5 V	Int/Ext	47.2	ADS8363EVM	QFN-32	3.95/6.95/ 9.95		
ADS8558/57/56	12/14/16	730/670/670	6 SE	SPI/Parallel	±12 V	Int/Ext	262.2/ 253.2/ 251.7	ADS8556EVM	LQFP-64	8.95/10.95/12.95		
ADS8528/48/68	12/14/16	650/600/510	8 SE	SPI/Parallel	±12 V	Int/Ext	335	ADS8568EVM-PDK	LQFP-64, VQFN-64	9.50/12.50/15.9		
ADS8634/38	12	1000	4 SE/8 SE	SPI	±10 V	Int/Ext	5.85/14.45	ADS8638EVM-PDK	VQFN-24, TSSOP-30	2.85/3.25		
ADS130E08	16	8	8 Diff	SPI	±2.5 - 0.5 V	Int/Ext	16	ADS130E08EVM-PDK	TQFP-64	3.95		
ADS131E08/06/04	24	64	8 Diff/6 Diff/4 Diff	SPI	±2.5 - 0.5 V	Int/Ext	16	ADS131E08EVM-PDK	TQFP-64	5.95/4.95/3.93		
ADS1278	24	128	8 Diff	SPI w/FSYNC	2.5 V	Ext	530	ADS1278EVM-PDK	TQFP-64	25.15		
<b>ADCs for Motor Control</b>												
ADS7253/7853/8353	12/14/16	1000/1000/700	2 SE	SPI	0 - 2*V <sub>REF</sub>	Int/Ext	45	ADS8353EVM-PDK	QFN-16, TSSOP-16	3.50/6.00/9.00		
ADS7254/7854/8354	12/14/16	1000/1000/700	2 DE	SPI	±2*V <sub>REF</sub>	Int/Ext	45	ADS8354EVM-PDK	QFN-16, TSSOP-16	4.00/6.50/9.50		
ADS8528/48/68	12/14/16	650/600/510	8 SE	SPI/Parallel	±12 V	Int/Ext	335	ADS8568EVM-PDK	LQFP-64, VQFN-64	9.50/12.50/15.90		
ADS8558/57/56	12/14/16	730/670/670	6 SE	SPI/Parallel	±12 V	Int/Ext	262.2/ 253.2/ 251.7	ADS8556EVM	LQFP-64	8.95/10.95/12.95		
ADS7223/7263/8363	12/14/16	1000	8 SE/4 Diff	SPI	±2.5 V	Int/Ext	47.2	ADS8363EVM	QFN-32	3.95/6.95/9.95		
ADS7945/46	14	2000	2 Diff/2 P. Diff	SPI	0-5.5 V	Ext	10.5	ADS7945EVM-PDK	WQFN-16	3.95/3.80		
ADS8361	16	500	4 Diff	SPI	±2.5 V	Int/Ext	150	ADS8361EVM	SSOP-24, QFN-32	9.19		
ADS7886	12	1000	1 SE	SPI	0 - V <sub>DD</sub> V	Supply	3.9	ADS7886EVM	SOT23-6, SC70-6	1.70		
ADS7883	12	3000	1 SE	SPI	0 - V <sub>DD</sub> V	Supply	13.5	ADS7883EVM	SOT23-6	1.85		
<b>DACs for Motor Control</b>												
Device	Res. (Bits)	No. of Output Channels	Output Type	Interface	Output Voltage Range	V <sub>REF</sub>	Power (mW)	Evaluation Tools	Package	Price*		
DAC5578/DAC6578/DAC7578	8/10/12	8	Voltage	I <sup>2</sup> C	0 - 5 V	Ext	2.3	DAC7678EVM	QFN-24, TSSOP-16	3.00/3.90/5.50		
DAC088S085/DAC108S085/DAC128S085	8/10/12	8	Voltage	SPI	0 - 5 V	Ext	1.95	DAC128S085EB	LLP-16, TSSOP-16	1.50/3.44/5.25		
DAC7568/DAC8168/DAC8568	12/14/16	8	Voltage	SPI	0 - 5 V	Int/Ext	2.2	DAC8568EVM	TSSOP-14, TSSOP-16	7.70/9.20/10.95		

\*Suggested resale price, for single channel, in U.S. dollars in quantities of 1,000.

Preview products are listed in **bold blue**. New products are listed in **bold red**.

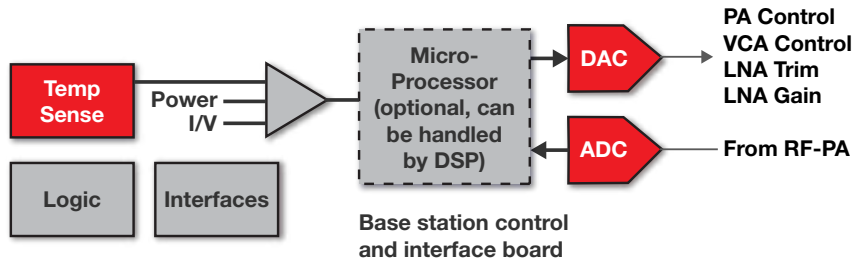


# Precision Data Converters

## Communications

### Applications

- Base Stations - Power Amplifier Control
- Base Stations - VGA/LNA Control
- Optical Networking, EDFA Loops
- Military/Public Safety Radios
- Voltage, Current and Temp Monitoring



Device	ADC/DAC Res. (Bits)	No. of ADC Inputs	ADC Sample Rate (kSPS)	ADC Input Range	No. of DAC Outputs	DAC Output Voltage - Max (V)	Number of GPIOs	Interface	Package	Price*
<b>Integrated Precision ADCs and DACs for Base Stations</b>										
AMC7891	10	8 SE	500	0 - 5.5 V	4	5	12	SPI	QFN-36	3.95
LMP92018	10	8 SE	500	0 - 5.25 V	4	5	12	SPI	QFN-36	3.60
AMC7823	12	8 SE	200	0 - 5 V	8	5	6	SPI	QFN-40	6.00
AMC7812	12	(16 SE) or (12 SE, 2 DE)	500	±5 V	12	0.4	8	SPI/I <sup>2</sup> C	QFN-64, TQFP-64	9.95
LMP92001	12	16 SE	100	0 - 5 V	12	5	8	I <sup>2</sup> C	LLP-56	9.00

Device	Res. (Bits)	No. of Output Channels	Interface	Output Voltage Range	Max INL (LSB)	V <sub>REF</sub>	Power (mW)	Tools	Package	Price*
<b>Precision DACs for Base Stations/Optical Networking</b>										
DAC7311	12	1	SPI	0 - 5 V	1	Supply	0.2	DAC7311EVM	SC-70	0.95
DAC7562	12	2	SPI	0 - 5 V	0.75	Int/Ext	0.5	DAC7562EVM	MSOP-10, QFN-10	2.50
DAC7578	12	8	I <sup>2</sup> C	0 - 5 V	1	Ext	2.3	DAC7678EVM	QFN-24, TSSOP-16	5.50
DAC7568	12	8	SPI	0 - 5 V	1	Int/Ext	2.2	DAC7568EVM	TSSOP-18	7.70
DAC8311	14	1	SPI	0 - 5 V	4	Supply	0.2	DAC7311EVM	SC-70	2.00
DAC8162	14	2	SPI	0 - 5 V	3	Int/Ext	0.5	DAC8562EVM	MSOP-10, QFN-10	3.85
DAC8168	14	8	SPI	0 - 5 V	4	Int/Ext	2.2	DAC8168EVM	TSSOP-18	9.20
DAC8562	16	2	SPI	0 - 5 V	12	Int/Ext	0.5	DAC8562EVM	MSOP-10, QFN-10	4.20
DAC8568	16	8	SPI	0 - 5 V	12	Int/Ext	2.2	DAC8568EVM	TSSOP-18	10.95

Device	Res. (Bits)	No. of Input Channels	Sample Rate (kSPS)	Input Voltage Range	Interface	V <sub>REF</sub>	Power (mW)	Tools	Package	Price*
<b>ADCs for Base Stations and Optical Networking</b>										
ADC081S101/101S101/121S101	8/10/12	1 SE	1000	0 - 5.25 V	SPI	Ext	2	ADC121S101EVAL	SON-6, SOT-6, USON-6, WSON-6	0.83/1.43/1.60
ADC082S101/102S101/122S101	8/10/12	2 SE	1000	0 - 5.25 V	SPI	Ext	4.3	ADC122S101EVAL	VSSOP-8	1.05/1.70/1.94
ADC084S101/104S101/124S101	8/10/12	4 SE	1000	0 - 5.25 V	SPI	Ext	4.3	ADC124S101EVAL	VSSOP-10	1.25/2.00/2.19
ADC088S102/108S102/128S102	8/10/12	8 SE	1000	0 - 5.25 V	SPI	Ext	2	ADC128S102EVAL	TSSOP-16	1.50/2.69/2.74
ADS8028	12	8 SE	1000	0 - 5.25 V	SPI	Int/Ext	17	ADS8028EVM, TINA	QFN-20	3.25
ADS7828	12	8 SE	50	0 - 5.25 V	I <sup>2</sup> C	Int/Ext	1.5	ADS7823-28EVM	TSSOP-16	3.58
ADS7953/2/1/0	12	16/12/8/4	1000	0 - 5.25 V	SPI	Ext	11.5	ADS7953EVM-PDK	QFN-32, TSSOP-38, QFN-24, TSSOP-30	4.05/3.35/2.70/2.10
ADS7957/6/5/4	10	16/12/8/4	1000	0 - 5.25 V	SPI	Ext	11.5	ADS7953EVM-PDK	QFN-32, TSSOP-38, QFN-24, TSSOP-30	3.55/3.00/2.45/1.90
ADS7961/60/59/58	8	16/12/8/4	1000	0 - 5.25 V	SPI	Ext	11.5	ADS7953EVM-PDK	QFN-32, TSSOP-38, QFN-24, TSSOP-30	2.25/1.85/1.50/1.15
ADS7886	12	1 SE	1000	0 - 5.25 V	SPI	Ext	3.9	ADS7886EVM	SC70-6, SOT-23-6	1.70
ADS7883	12	1 SE	3000	0 - 5.5 V	SPI	Ext	13.5	ADS7883EVM	SOT-23-6	1.85
ADS7945/46	14	2 Diff, 2 P. Diff	2000	0 - 5.5 V	SPI	Ext	10.5	ADS7945EVM-PDK	WQFN-16	3.95/3.80
ADS8331/32	16	4/8 SE	500	0 - 5.5 V	SPI	Ext	17.55	ADS8331EVM/ADS8332EVM	TSSOP-24, VQFN-24	5.25/6.25
ADS7223/7263/8363	12/14/16	8 SE/4 Diff	1000	±2.5 V	SPI	Int/Ext	47.2	ADS8363EVM	QFN-32	3.95/6.95/9.95
ADS8329/30	16	1 DE/2 SE	1000	0 - 5.5 V	SPI	Ext	15.5	—	QFN-16, TSSOP-16	7.20/7.60
ADS1158	16	16 SE	125	±2.5 V	SPI	Ext	42	ADS1158EVM-PDK	QFN-48	5.95

\*Suggested resale price in U.S. dollars in quantities of 1,000.

# Precision Data Converters

## Consumer/General Purpose

**Applications:** Data Acquisition, Battery Voltage Monitoring, Offset and Gain Control, VCXO Control, and Consumer Electronics.

Device	Res. (Bits)	Max Sample Rate (kSPS)	No. of Input Channels	Interface	V <sub>REF</sub>	Power (mW)	Hardware Evaluation Tools	Package	Price*	
<b>Low-Power, Low-Cost Delta Sigma ADCs</b>										
ADS1015	12	3.3	4 SE/2 Diff	I <sup>2</sup> C	Int	0.36	ADS1015EVM-PDK	MSOP-10, QFN-10	1.15	
ADS1013/14	12	3.3	1 SE/1 Diff	I <sup>2</sup> C	Int	0.36	ADS1015EVM-PDK	MSOP-10, QFN-10	0.95/1.05	
ADS1000	12	0.13	1 SE/1 Diff	I <sup>2</sup> C	Supply	0.21	—	SOT-23	0.90	
ADS1018	12	3.3	4 SE/2 Diff	SPI	Int	0.9	ADS1118EVM	MSOP-10, QFN-10	1.15	
ADS1118	16	0.86	4 SE/2 Diff	SPI	Int	0.9	ADS1118EVM	MSOP-10, QFN-10	2.30	
ADS1115	16	0.86	4 SE/2 Diff	I <sup>2</sup> C	Int	0.36	ADS1115EVM-PDK	MSOP-10, QFN-10	2.30	
ADS1113/14	16	0.86	1 SE/1 Diff	I <sup>2</sup> C	Int	0.36	ADS1115EVM-PDK	MSOP-10, QFN-10	1.95/2.15	
ADS1110	16	0.24	4 SE/2 Diff	I <sup>2</sup> C	Int	0.72	—	SOT-23	2.34	
ADS1100	16	0.13	1 SE/1 Diff	I <sup>2</sup> C	Supply	0.27	—	SOT-23	2.00	
<b>Multi-Purpose SAR ADCs</b>										
Device	Res. (Bits)	No. of Input Channels	Sample Rate (kSPS)	Input Voltage Range	Interface	V <sub>REF</sub>	Power (mW)	Hardware Evaluation Tools	Package	Price*
ADS7830	8	8 SE/4 Diff	70	0 - 5.25 V	I <sup>2</sup> C	Int/Ext	0.75	—	TSSOP-16	1.50
ADC081S101/ 101S101/121S101	8/10/12	1 SE	1000	0 - 5.25 V	SPI	Ext	2	ADC121S101EVAL	SON-6, SOT-6, USON-6, WSON-6	0.83/1.43/ 1.60
ADC081C021/ 101C021/121C021	8/10/12	1 SE	189	0 - 5.25 V	I <sup>2</sup> C	Ext	0.26	ADC121C02XEB	TSOT-6, MSOP-8	0.61/1.00/ 1.16
ADS7949/48/47	8/10/12	2 P. Diff	2000	0 - 5.5 V	SPI	Ext	7.5	ADS7946EVM-PDK	WQFN-16	0.99/1.70/ 1.95
ADS7924	12	4 SE	100	0 - 5.5 V	I <sup>2</sup> C	Ext	0.5	ADS7924EVM-PDK	QFN-16	1.25
ADS7828	12	8 SE	50	0 - 5.25 V	I <sup>2</sup> C	Int/Ext	1.5	ADS7823-28EVM	TSSOP-16	3.58
ADS8028	12	8 SE	1000	0 - 5.25 V	SPI	Int/Ext	17	ADS8028EVM-PDK, TINA-Model	QFN-20	3.25
ADS7953/2/1/0	12	16/12/8/4	1000	0 - 5.25 V	SPI	Ext	11.5	ADS7953EVM-PDK	QFN-32, TSSOP-38, QFN-24, TSSOP-30	4.05/3.35/ 2.70/2.10
ADS7957/6/5/4	10	16/12/8/4	1000	0 - 5.25 V	SPI	Ext	11.5	ADS7953EVM-PDK	QFN-32, TSSOP-38, QFN-24, TSSOP-30	3.55/3.00/ 2.45/1.90
ADS7961/60/59/58	8	16/12/8/4	1000	0 - 5.25 V	SPI	Ext	11.5	ADS7953EVM-PDK	QFN-32, TSSOP-38, QFN-24, TSSOP-30	2.25/1.85/ 1.50/1.15
ADS7945/6	14	2 Diff/2 P. Diff	2000	0 - 5.5 V	SPI	Ext	10.5	ADS7945EVM-PDK	WQFN-16	3.95/3.80
ADS8860/2/4/6	16	1 SE	1000/680/ 400/100	0 - V <sub>REF</sub>	SPI	Ext	5.5/4.2/ 2.6/0.7	ADS8860EVM-PDK	MSOP-10, SON-10	10.00/8.00/ 6.50/5.00
ADS8861/3/5/7	16	1 DE	1000/680/ 400/100	±V <sub>REF</sub>	SPI	Ext	5.5/4.2/ 2.6/0.7	ADS8861EVM-PDK	MSOP-10, SON-10	11.00/9.00/ 7.50/5.50
ADS8881/3/5/7	18	1 DE	1000/680/ 400/100	±V <sub>REF</sub>	SPI	Ext	5.5/4.2/ 2.6/0.7	ADS8881EVM-PDK	MSOP-10, SON-10	19.95/14.95/ 10.95/7.95
ADS8331/32	16	4 SE/8 SE	500	0 - 5.5 V	SPI	Ext	17.55	ADS8331EVM/ ADS8332EVM	TSSOP-24, VQFN-24	5.25/6.25
ADS8344	16	8 SE/4 Diff	100	0 - 5.25 V	SPI	Ext	3.6	ADS8344EVM	SSOP-20, QSOP-20	8.00
<b>Precision DACs</b>										
Device	Res. (Bits)	No. of Output Channels	Output Type	Interface	Output Voltage Range	V <sub>REF</sub>	Power Typ (mW)	Hardware Evaluation Tools	Package	Price*
DAC081C085/101085/ DAC121C085	8/10/12	1	Voltage	I <sup>2</sup> C	0 - 5 V	Ext	0.38	DAC081C08XEB	LLP-6, TSOT-6, MSOP-8	0.55/0.65/ 1.15
DAC081S101/101S101/ 121S101	8/10/12	1	Voltage	SPI	0 - 5 V	Supply	0.63	DAC121S101CVAL	TSOT-6, MSOP-8	0.55/0.65/ 1.15
DAC082S085/102S085/ 122S085	8/10/12	2	Voltage	SPI	0 - 5 V	Ext	0.6	DAC122S085EB	LLP-10, MSOP-10	0.70/1.40/ 1.80
DAC084S085/104S085/ 124S085	8/10/12	4	Voltage	SPI	0 - 5 V	Ext	1.1	DAC124S085EB	LLP-10, MSOP-10	0.90/2.00/ 3.00
DAC088S085/108S085/ 128S085	8/10/12	8	Voltage	SPI	0 - 5 V	Ext	1.95	DAC128S085EB	LLP-16, TSSOP-16	1.50/3.44/ 5.25
DAC5311/6311/7311/ 8311/8411	8/10/12/ 14/16	2	Voltage	SPI	0 - 5 V	Supply	0.4	DAC7311EVM	SC-70	0.55/0.68/0.95/ 2.00/2.60
DAC7562/8162/8562	12/14/16	2	Voltage	SPI	0 - 5 V	Int/Ext	0.5	DAC7562EVM	MSOP-10, QFN-10	2.50/3.85/4.20

\*Suggested resale price, for single channel, in U.S. dollars in quantities of 1,000.

Preview products are listed in **bold blue**. New products are listed in **bold red**.

# Precision Data Converters

## Technical Support and Resources

**TI Precision Designs™**—TI Precision Designs is a library of complete board-and-system level circuits designed to help engineers quickly evaluate and customize their systems while expanding their analog knowledge base. Three levels of designs are offered - Reference, Verified and CerTified – providing a combination of theory, methodology, simulation, tested results, and design files from the desks of our analog experts.

**TI E2E™ Community**—Open network of > 50,000 engineers and TI experts who collaborate by asking and answering technical questions and solving problems.

**Sensor AFE WEBENCH® Software**—Easy to use online design tool that allows you to select sensors, configure signal path, evaluate performance and move rapidly to prototyping.

**ADCPro™**—Modular software system for evaluating ADCs without the need for expensive logic analyzers and complex analysis routines.

**IBIS Models**—I/O Buffer Specification is an industry standard, fast and accurate behavioral method of modeling input/output buffers based on V/I curve data derived from measurement or full circuit simulation. These are widely used for signal integrity analysis on system boards and can be used by any simulators/EDA tools in the industry.

**TINA-TI™**—is an easy-to-use, powerful circuit simulation tool based on a SPICE engine, and Texas Instruments is the industry's first and currently only company to incorporate a SAR ADC front-end macromodel into a SPICE simulation tool.



## TI Precision Designs

### Three levels of design for faster time to market



- Reference Designs**  
Circuits complete with
- Theory
  - Calculations
  - Simulation
  - Design methodology



- Verified Designs**  
Reference Designs+
- Schematics
  - Bench results
  - Layout and design files



- CerTified Designs**  
Verified Designs+
- Certification testing results for ESD, EMI and more



Learn more at <http://ti.com/precisiondesigns>

### TI Worldwide Online Technical Support

TI Semiconductor Product Information Center Home Page ..... [support.ti.com](http://support.ti.com)

TI E2E™ Community Home Page ..... [e2e.ti.com](http://e2e.ti.com)

Worldwide Product Information Center ..... [www.ti.com/worldwidepic](http://www.ti.com/worldwidepic)

**Important Notice:** The products and services of Texas Instruments Incorporated and its subsidiaries described herein are sold subject to TI's standard terms and conditions of sale. Customers are advised to obtain the most current and complete information about TI products and services before placing orders. TI assumes no liability for applications assistance, customer's applications or product designs, software performance, or infringement of patents. The publication of information regarding any other company's products or services does not constitute TI's approval, warranty or endorsement thereof.

© 2013 Texas Instruments Incorporated. The platform bar and E2E are trademarks of Texas Instruments. All other trademarks are the property of their respective owners.  
Printed in U.S.A.

## IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, enhancements, improvements and other changes to its semiconductor products and services per JESD46, latest issue, and to discontinue any product or service per JESD48, latest issue. Buyers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All semiconductor products (also referred to herein as "components") are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its components to the specifications applicable at the time of sale, in accordance with the warranty in TI's terms and conditions of sale of semiconductor products. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by applicable law, testing of all parameters of each component is not necessarily performed.

TI assumes no liability for applications assistance or the design of Buyers' products. Buyers are responsible for their products and applications using TI components. To minimize the risks associated with Buyers' products and applications, Buyers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any patent right, copyright, mask work right, or other intellectual property right relating to any combination, machine, or process in which TI components or services are used. Information published by TI regarding third-party products or services does not constitute a license to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of significant portions of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI components or services with statements different from or beyond the parameters stated by TI for that component or service voids all express and any implied warranties for the associated TI component or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

Buyer acknowledges and agrees that it is solely responsible for compliance with all legal, regulatory and safety-related requirements concerning its products, and any use of TI components in its applications, notwithstanding any applications-related information or support that may be provided by TI. Buyer represents and agrees that it has all the necessary expertise to create and implement safeguards which anticipate dangerous consequences of failures, monitor failures and their consequences, lessen the likelihood of failures that might cause harm and take appropriate remedial actions. Buyer will fully indemnify TI and its representatives against any damages arising out of the use of any TI components in safety-critical applications.

In some cases, TI components may be promoted specifically to facilitate safety-related applications. With such components, TI's goal is to help enable customers to design and create their own end-product solutions that meet applicable functional safety standards and requirements. Nonetheless, such components are subject to these terms.

No TI components are authorized for use in FDA Class III (or similar life-critical medical equipment) unless authorized officers of the parties have executed a special agreement specifically governing such use.

Only those TI components which TI has specifically designated as military grade or "enhanced plastic" are designed and intended for use in military/aerospace applications or environments. Buyer acknowledges and agrees that any military or aerospace use of TI components which have **not** been so designated is solely at the Buyer's risk, and that Buyer is solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI has specifically designated certain components as meeting ISO/TS16949 requirements, mainly for automotive use. In any case of use of non-designated products, TI will not be responsible for any failure to meet ISO/TS16949.

### Products

Audio	<a href="http://www.ti.com/audio">www.ti.com/audio</a>
Amplifiers	<a href="http://amplifier.ti.com">amplifier.ti.com</a>
Data Converters	<a href="http://dataconverter.ti.com">dataconverter.ti.com</a>
DLP® Products	<a href="http://www.dlp.com">www.dlp.com</a>
DSP	<a href="http://dsp.ti.com">dsp.ti.com</a>
Clocks and Timers	<a href="http://www.ti.com/clocks">www.ti.com/clocks</a>
Interface	<a href="http://interface.ti.com">interface.ti.com</a>
Logic	<a href="http://logic.ti.com">logic.ti.com</a>
Power Mgmt	<a href="http://power.ti.com">power.ti.com</a>
Microcontrollers	<a href="http://microcontroller.ti.com">microcontroller.ti.com</a>
RFID	<a href="http://www.ti-rfid.com">www.ti-rfid.com</a>
OMAP Applications Processors	<a href="http://www.ti.com/omap">www.ti.com/omap</a>
Wireless Connectivity	<a href="http://www.ti.com/wirelessconnectivity">www.ti.com/wirelessconnectivity</a>

### Applications

Automotive and Transportation	<a href="http://www.ti.com/automotive">www.ti.com/automotive</a>
Communications and Telecom	<a href="http://www.ti.com/communications">www.ti.com/communications</a>
Computers and Peripherals	<a href="http://www.ti.com/computers">www.ti.com/computers</a>
Consumer Electronics	<a href="http://www.ti.com/consumer-apps">www.ti.com/consumer-apps</a>
Energy and Lighting	<a href="http://www.ti.com/energy">www.ti.com/energy</a>
Industrial	<a href="http://www.ti.com/industrial">www.ti.com/industrial</a>
Medical	<a href="http://www.ti.com/medical">www.ti.com/medical</a>
Security	<a href="http://www.ti.com/security">www.ti.com/security</a>
Space, Avionics and Defense	<a href="http://www.ti.com/space-avionics-defense">www.ti.com/space-avionics-defense</a>
Video and Imaging	<a href="http://www.ti.com/video">www.ti.com/video</a>

### TI E2E Community

[e2e.ti.com](http://e2e.ti.com)