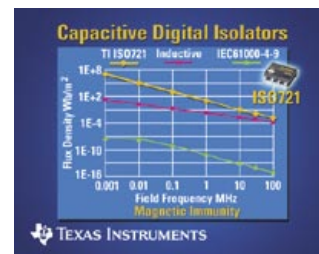




AUTHORIZED DISTRIBUTOR

ISO721, ISO722-3.3V and 5V, High-Speed Digital Isolators

Texas Instruments' ISO721 digital isolator is a logic input-and-output buffer separated by a silicon oxide (SiO₂) insulation barrier, which provides galvanic isolation of up to 4,000V. Used in conjunction with isolated power supplies, the device prevents noise currents on a data bus or other circuits from entering the local ground and interfering with or damaging sensitive circuitry.



Package options: SO-8

Features ▶

- 4000V isolation
- Fail-safe output
- Signaling rate: 0 Mbps to 150 Mbps
- Transient immunity: 50 kV/μs
- UL 1577, IEC60747-5-2 (VDE 0884, rev. 2) IEC 61010-1, and CSA-approved

Benefits ▶

- Proven reliability of SiO₂ dielectric, stable over temperature and moisture; life span >25 years
- High magnetic immunity (1E6>inductive)
- Lower power than optoisolators
- Filters noisy signals before they enter the system
- Flexibility with power supplies

Applications ▶

- Industrial fieldbus
- Servo monitoring and control

Product Specifications ▶

	Part Number	Description	Isolation Rating (UL) (V _{RMS})	Low-Power Sleep Mode	Data Rate Max. (Mbps)	Transient Immunity Min. (kV/μs)	Supply Voltage (V)
Digital Isolators	ISO721	Single-channel (TTL)	2500	No	100	25	3.3, 5
	ISO721M	Single-channel (CMOS)	2500	Yes	150	25	3.3, 5
	ISO722	Single-channel OUT EN (TTL)	2500	Yes	100	25	3.3, 5
	ISO722M	Single-channel OUT EN (CMOS)	2500	Yes	150	25	3.3, 5
	ISO150	Dual-channel bi-directional	1500	No	80	1.6	5
	ISO7220A	Dual-channel uni-directional (TTL)	2500	No	1	25	3.3, 5
	ISO7220C	Dual-channel uni-directional (TTL)	2500	No	25	25	3.3, 5
	ISO7220M	Dual-channel uni-directional (CMOS)	2500	No	150	25	3.3, 5
	ISO7221A	Dual-channel bi-directional (TTL)	2500	No	1	25	3.3, 5
	ISO7221C	Dual-channel bi-directional (TTL)	2500	No	25	25	3.3, 5
	ISO7221M	Dual-channel bi-directional (CMOS)	2500	No	150	25	3.3, 5



Package options: single, MSOP-8,
SON-8, TSSOP-16, SSOP-28

Highest Accuracy and Industrial Bipolar DACs

The DAC88xx and DAC78xx families of current output DACs from Texas Instruments are designed to operate from a single 2.7V to 5.5V supply and are available in single, dual, and quad versions. A double-buffered, serial data interface offers high-speed, 3-wire SPI and microcontroller-compatible inputs using serial data-in, a clock and a chip-select. Parallel versions are available.

Features ▶

- Relative accuracy: 1 LSB (max.)
- ± 2 mA full-scale current with $V_{REF} = \pm 10V$
- Settling time: 0.5 μs
- Reference bandwidth: 10 MHz
- Reference dynamics: -105 dB THD

Benefits ▶

- Industry-standard pin configuration
- Provides the flexibility to configure circuits to match customer requirements
- Very low-power, high-accuracy applications
- Low-distortion attenuators

Applications ▶

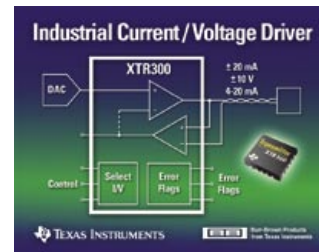
- Automatic test equipment
- Instrumentation
- Digitally-controlled calibration
- Industrial control PLCs

Product Specifications ▶

	Part Number	Resolution (Bits)	Settling Time (μs)	Number of DAC Channels	Interface	Output (V)	V_{REF}	Integral Non-Linearity (%)	Monotonic (Bits)	Power Typ. (mW)
Highest Accuracy, Low-Power DACs	DAC8811	16	0.5	1	Serial, SPI	$I_{OUT} (\pm 10)$	Ext.	0.0015	16	0.027
	DAC8820	16	0.5	1	P16	$I_{OUT} (\pm 10)$	Ext.	0.0015	16	0.027
	DAC8812	16	0.5	2	Serial, SPI	$I_{OUT} (\pm 10)$	Ext.	0.0015	16	0.027
	DAC8822	16	0.5	2	P16	$I_{OUT} (\pm 10)$	Ext.	0.0015	16	0.027
	DAC8814	16	1	4	Serial, SPI	$I_{OUT} (\pm 10)$	Ext.	0.0015	16	0.027
	DAC8801	14	0.5	1	Serial, SPI	$I_{OUT} (\pm 10)$	Ext.	0.0061	14	0.027
	DAC8806	14	0.5	1	P14	$I_{OUT} (\pm 10)$	Ext.	0.0061	14	0.027
	DAC8802	14	0.5	2	Serial, SPI	$I_{OUT} (\pm 10)$	Ext.	0.0061	14	0.027
	DAC8805	14	0.5	2	P14	$I_{OUT} (\pm 18)$	Ext.	0.0061	14	0.0027
	DAC8803	14	1	4	Serial, SPI	$I_{OUT} (\pm 10)$	Ext.	0.0061	14	0.0275
	DAC7811	12	0.2	1	Serial, SPI	$I_{OUT} (\pm 10)$	Ext.	0.012	12	0.001
	DAC7821	12	0.2	1	P12	$I_{OUT} (\pm 10)$	Ext.	0.012	12	0.001
	DAC7822	12	0.2	2	P12	$I_{OUT} (\pm 10)$	Ext.	0.0244	12	0.275

XTR300: Industrial Analog Voltage or Current Output Driver

The XTR300 from Texas Instruments is a complete output driver for industrial and process control applications. The output can be selected as current or voltage by the digital I/V select pin, and error flags allow for convenient fault detection. Separate driver and receiver channels provide added flexibility. The integrated instrumentation amplifier can be used for remote voltage sensing or as a high-voltage, high-impedance measurement channel. Maximum output current limit and thermal protection are provided.



TSSOP-20, 5 x 5 QFN

Features ▶

- Pin select I or V output or input
- Pin select for output enable/disable (OE)
- Gain or transconductance set by external resistors
- Output voltage swing: ± 16 at $V_S = \pm 19V$
- Output current: ± 24 mA (linear range)

Benefits ▶

- Makes remote configuration and troubleshooting easy
- Provides additional circuit and board protection
- Compact solution for industrial interface
- Adaptable for application needs
- Allows maximum design flexibility

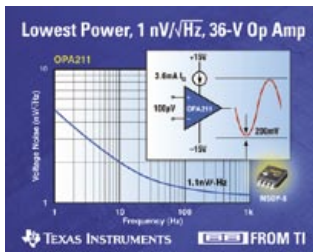
Applications ▶

- Analog interface between industrial high-voltage and low-voltage signal processing: PLC - I/O, field bus I/O

Product Specifications ▶

	Part Number	Description	Sensor Excitation	Loop Voltage (V)	Full-Scale Input Range	Output Range (mA)	Additional Power Available (V at mA)	Package(s)
2-Wire, 4 mA-20 mA Transmitters	XTR105	100 Ω RTD conditioner with linearization	Two 800 μ A	7.5-36	5 mV-1V	4-20	5.1 at 0.5	DIP-14, SOIC-14
	XTR106	Bridge conditioner with linearization	5V and 2.5V	7.5-36	5 mV-1V	4-20	5.1 at 1	DIP-14, SOIC-14
	XTR108	10 Ω to 10 k Ω RTD conditioner, 6-channel input max, extra op amp can	Two 500 μ A	7.5-24	5 mV-320mV	4-20	5.1 at 2.1	SSOP-24, EVM*
Convert to voltage sensor excitation, calibration stored in external EEPROM	XTR112	1 k Ω RTD conditioner with linearization	Two 250 μ A	7.5-36	5 mV-1V	4-20	5.05 at 1	SOIC-14
	XTR114	10 k Ω RTD conditioner with linearization	Two 100 μ A	7.5-36	5 mV-1V	4-20	5.05 at 1	SOIC-14
	XTR115	I_{IN} to I_{OUT} converter, external resistor scales V_{IN} to I_{IN}	$V_{REF} = 2.5V$	7.5-36	40 μ A-250 μ A	0.25-25	4.9 at 1	SOIC-8
	XTR116	I_{IN} to I_{OUT} converter, external resistor scales V_{IN} to I_{IN}	$V_{REF} = 4.096V$	7.5-36	40 μ A-250 μ A	0.25-25	4.9 at 1	SOIC-8
	XTR117	Current loop, 7.5V-40V, 5V voltage regulator	$V_{REG} = 5V$	7.5-40	5 mV-1V	0.25-25	4.9 at 1	MSOP-8, DFN-8
Bridge conditioner with digital calibration for linearization, span, and offset-over-temperature	PGA309	Complete digitally-calibrated bridge sensor conditioner, voltage output, calibration stored in external EEPROM, one-wire/two-wire interface	$V_{EXC} = V_S$, 2.5V 4.096V	2.7-5.5	1m V/V-245 mV/V	0.1V-4.9V, at $V_S = +5V$	NA	TSSOP-16, EVM*
Industrial current/voltage drivers	XTR110	Precision V-to-I converter/transmitter, selectable I/O ranges	$V_{REF} = 10V$	13.5-40	0V-5V, 0V-10V	0-20, 4-20, 5-25	NA	DIP-16, SOL-16
	XTR111	Precision V-to-I converter/transmitter, adjustable V_{REG} 3V-15V	$V_{REG} = 3$ to 15V	7-40	0V to 12V	0-20, 4-20, 5-25	3V-15V	DFN/MSOP-10
	XTR300	Industrial analog current/voltage output driver	NA	<34	V(-)+3 to V(+)-3, digitally-selected $V_{O\leq}$	$\pm 17V$, ± 24 mA	NA	5 x 5 QFN, TSSOP-20, EVM*
4 mA-20 mA current loop receiver	RCV420	4 mA-20 mA input, 0V-5V output, 1.5V loop drop	$V_{REF} = 10V$	+11.5/-5 to ± 18	4 mA-20 mA	0V-5V	NA	DIP-16

* Available Evaluation Module



Package options: DFN-8 (3 mm x 3 mm),
MSOP-8, SO-8

OPA211 and OPA827 Amplifiers

The new OPA211 (bipolar) and OPA827 (JFET) precision amplifiers from Texas Instruments offer lower power, smaller package size, and low noise, enabling breakthrough performance in test and measurement, instrumentation, imaging, medical, audio, and industrial process control applications. These amplifiers were developed using the industry's first complementary bipolar 36V SiGe process—BiCom3HV.

Features ▶

- Low-noise voltage: 1.1 nV/√Hz at 1 kHz (OPA211 specifications)
- 100 nV_{PP} inputs voltage noise, 0.1 Hz–10 Hz
- Low-offset voltage: 100 μV (max.)
- Low-offset voltage drift: 0.2 μV/°C (typ.)
- Wide supply range: ±2.25V to ±18V, +4.5V to +36V

Benefits ▶

- Provides minimal signal distortion
- Very high signal accuracy
- Spans 5V to full industrial range
- Maximum amplification at any V_{CC} range
- Small package

Applications ▶

- Phase lock loop filters
- High performance ADC drivers
- High performance DAC output amplifiers
- Professional audio preamps
- Medical

Product Specifications ▶

Low-Noise Operational Amplifiers (V _n ≤ 10 nV/rtHz)	Part Number	Description/Technology	Channels	V _S Min. (V)	V _S Max. (V)	I _Q Per Ch. Max. (mA)	GBW Typ. (MHz)	Slew Rate Typ. (V/μs)	V _{OS} Max. (25°C) (mV)	V _{OS} Drift Typ. (μV/°C)
	OPAy211	Ultra-low noise, high-precision	1, 2	4.5	36	3.6	58	27	0.15	0.2
	TLE2027	Wide supply, bipolar	1	8	38	5.3	13	2.8	0.1	0.4
	OPA300	Very wide bandwidth	S	2.7	5.5	12	150	80	2.5	5
	OPA227	High-precision, bipolar	1, 2, 4	5	36	3.8	8	2.3	0.075	0.1
	OPA228	High-speed, precision	1, 2, 4	5	36	3.8	33	11	0.075	0.1
	OPAy827	Ultra-low THD+N, high-precision	1, 2	8	36	4.5	18	22	0.25	1
	OPAy350	Excellent ADC driver	1, 2, 4	2.7	5.5	7.5	38	22	0.5	4
	OPA365	High-speed, zero crossover	1, 2	2.2	5.5	5	50	25	0.5	1
	OPA353	Good ADC driver, low THD+N, CMOS	1, 2, 4	2.7	5.5	8	44	22	8	5
	OPA627, OPA637	Precision, high-speed, Difet	1	9	36	7.5	16, 80	55, 135	0.1	0.4
	OPA376	Low-power RRIO	1, 2, 4	2.2	5.5	0.95	5	4	0.05	2
	OPA121	Precision, Difet	1	10	36	4.5	2	2	3	3
	OPAy277	High-precision	1, 2, 4	4	36	0.825	1	0.8	0.02	0.1
	OPA124	Low-noise, precision, bipolar	1	10	36	2.5	1.5	1.6	0.25	2
	TLC220x	Precision, low-power, LinCMOS	1, 2	4.6	16	1.5	1.8	2.5	0.5	0.5
	OPAy132	Wide-bandwidth, FET-input	1, 2, 4	5	36	4.8	8	20	0.5	2