

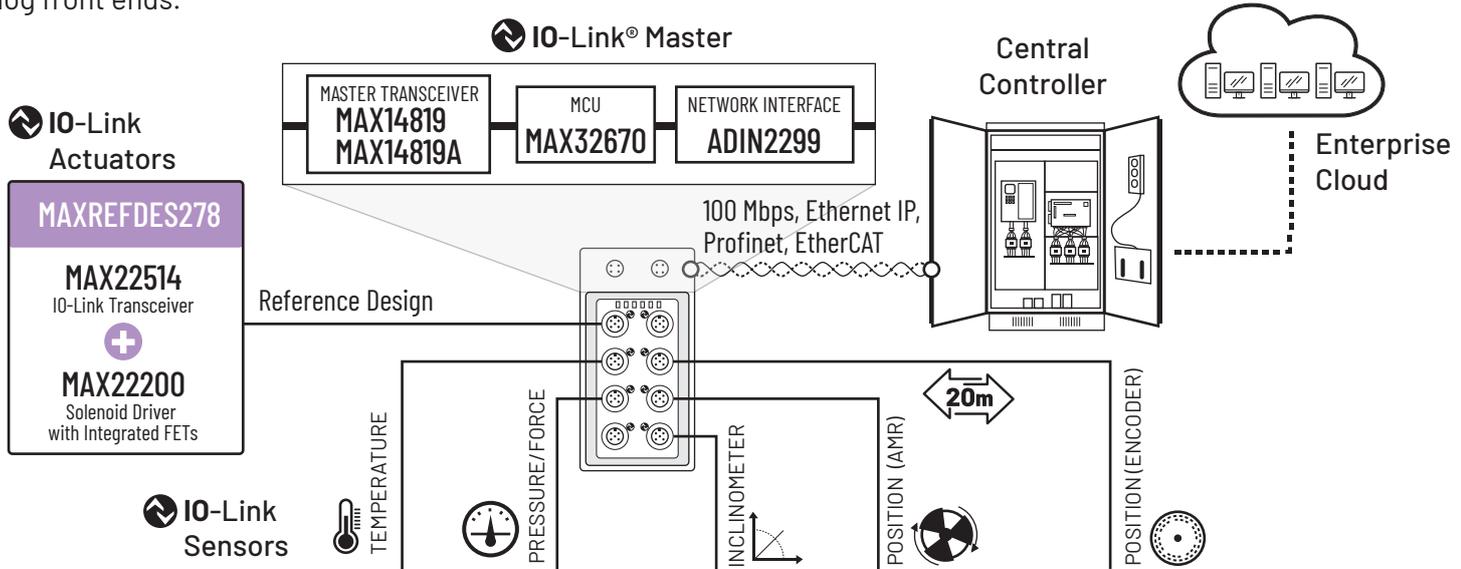


AHEAD OF WHAT'S POSSIBLE™

Embrace the Digital Enterprise

with Smart Factory Sensors

Smart factories require intelligent sensors and actuators that facilitate better decision making, enabling more flexible and readily optimized manufacturing processes. IO-Link® technology enables traditional sensors to become intelligent sensors and makes a real-time configurable factory floor a reality. Analog Devices' IO-Link master and device transceiver portfolio offers a powerful and flexible means of moving intelligence from the PLC closer to the sensors on the factory floor. In tandem with IO-Link, ADI's high precision analog converter, linear, and signal conditioning portfolio offers products to match the performance, power, cost and size requirements for smart sensor analog front ends.



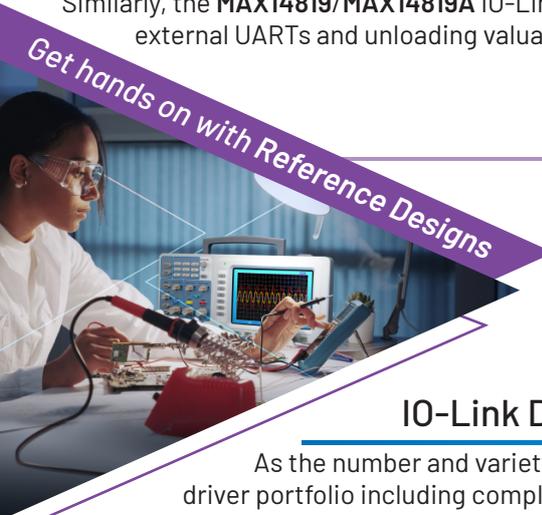
Power	MAX17502 / MAX17503 / LT8620				
IO-Link Device Transceiver	MAX14827A / MAX14828 / MAX14829 / MAX22513 / MAX22514 / MAX22515				
MCU	MAX32662			MAX32662 / MAX32690	
AFE	AD4130-8 AD7124 RTD MAX31865 THERMOCOUPLE MAX31855 EMBEDDED SENSOR MAX31875 ADT7420	AD4130-8 AD7124 PRESSURE/FORCE	EMBEDDED SENSOR ADXL357 INCLINOMETER	AD4680 AD4681 ADA4807-1 ADR4533 EMBEDDED SENSOR ADA4570	LTC6702 AD7380 ADA4945-1 AD8656 POSITION (ENCODER)



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Seamless Smart Factory Sensor Connectivity

Utilizing IO-Link in factory sensors allows remote configuration, communication, and real-time sensor diagnostics. IO-Link device transceivers from ADI are highly integrated, configurable, robust, low power and have a small form factor, designed to meet the challenges of ever-shrinking IO-Link sensors. For example, the highly integrated and robust **MAX22513** IO-Link device transceiver includes a high efficiency DC-DC buck regulator, dissipates 50% less power, and is 50% smaller than other dual channel solutions. Similarly, the **MAX14819/MAX14819A** IO-Link master transceivers feature integrated UART framers, eliminating the need for external UARTs and unloading valuable overhead from the system microcontroller.



Get hands on with Reference Designs

MAXREFDES145#

8-Channel IO-Link Master

- ▶ IO-Link sensor/actuator test system
- ▶ Simultaneous 8-port operation
- ▶ TEConcept IO-Link master stack

MAXREFDES278#

8-Channel IO-Link Solenoid Actuator

- ▶ IO-Link version 1.1 compliant
- ▶ 36 V, 1 A octal solenoid driver (MAX22200)
- ▶ TMG TE IO-Link stack

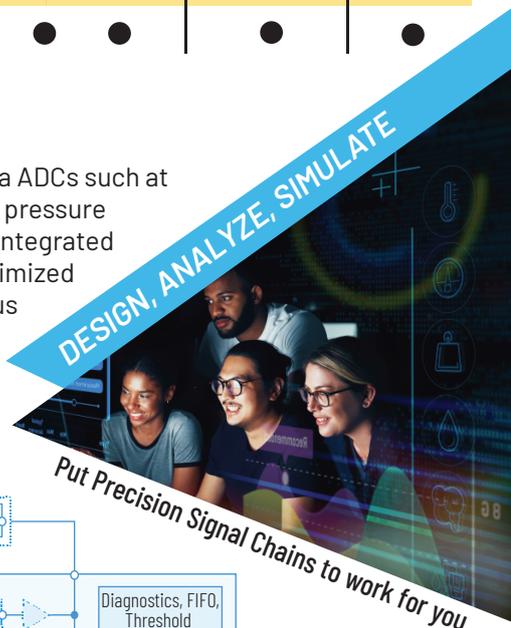
IO-Link Device Transceiver Selection Considerations

As the number and variety of IO-Link applications grows, ADI continues to expand its IO-Link and binary sensor driver portfolio including complete ecosystem reference designs. Selecting the best IO-Link device transceiver to use depends on the end application and consideration needs to be given to the control interface type (SPI/I²C/Pin-Mode), surge protection needs, hot-plug requirements, as well as size constraints.

	Interface			Driver Channels			DC-DC	Configurable as Master	Package Type		Integrated Surge Protection	Hot-Plug
	SPI	I ² C	Pin-mode	C/Q	DI	DO			TQFN	WLP		
MAX14827A	●	○	●	●	●	●	○	○	●	●	○	●
MAX14828	●	○	●	●	●	○	○	○	●	●	○	●
MAX14829	○	○	●	●	●	●	○	○	●	○	○	●
MAX22513	●	●	○	●	●	●	●	○	●	●	●	●
MAX22514	●	○	○	●	○	○	●	●	●	●	●	●
MAX22515	○	●	●	●	●	○	○	●	●	●	●	●

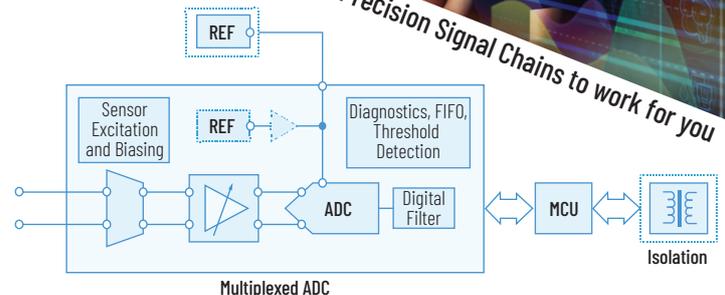
Precision Signal Chains for Sensor Measurement

ADI is simplifying the development of smart factory sensors. Industry-leading sigma-delta ADCs such as the **AD7124-4/AD7124-8** and **AD4130-8** integrate the full signal chain for temperature and pressure measurement with advanced diagnostics, while the **MAX31875** and **ADT7420** offer a fully integrated digital temperature sensor solution. For encoder-based position sensing, the density optimized front end signal chain built upon the 4MSPS 16-bit SAR **AD7380** ADC provides simultaneous sampling capability to maintain phase accuracy in the measurement. The AMR (Anisotropic Magneto Resistive) based rotation sensing signal chains use the **ADA4570** AMR angle sensor with integrated signal conditioning and the **AD4680** differential input SAR ADC. These signal chains can be quickly evaluated and tuned to exact application needs, with complete LTspice circuits, technical articles and power management solutions available for download.



Powering Smart Factory Sensors

ADI's expanded portfolio of tailored high efficiency and low noise industrial power systems provides multiple levels of power to drive sensors and actuators. With **MAX17502** offering an ultra-small footprint, while delivering up to 1 A of current, and **MAX17503** with integrated internal compensation eliminating the need for external components, ADI is reducing heat dissipation in space constrained designs. For added robustness and performance, the **LT8620** consumes only 2.5 μ A of quiescent current and accepts a wide input voltage range up to 65 V.



Put Precision Signal Chains to work for you

Want to LEARN more... READ our BLOG on **ADI EngineerZone™**
Creative Low Power Solutions for Field Instrumentation & Factory Automation