Brief Description

The ZIOL2201 is a line driver/level shifter IC that provides an HV* I/O channel with a wide range of configurable system features. It addresses the physical layer of sensor/actuator systems in factory automation applications, and it is specifically designed to support the communication standard IO-Link [†].

The output driver is a push-pull stage that reaches an R_{DSon} of less than 6.6Ω at all operational temperatures.

The configuration is stored in an on-chip EEPROM and automatically loaded into the ZIOL2201's control register during power-up. The ZIOL2201 also provides status information, such as overload and over-temperature. An integrated SPI interface supports access to configuration and status registers.

The ZIOL2201 is fabricated in a powerful CMOS mixed-signal technology allowing supply voltages up to 40V. EEPROM read/write functionality is guaranteed within the entire operating temperature range in combination with a low-voltage 3.3V core supply.

Features

- Configurable output current limitation: 56mA to 410mA
- Standard cable driver/ physical layer transceiver for IO-Link (device)
- Slew-rate controlled driver
- Wide range for configurable feature set, which is automatically loaded after power-on reset
- Onboard DC/DC converter
- IO-Link-specific WURQ[‡] detection
- On-chip registers and EEPROM for system configuration and status information
- SPI interface for accessing on-chip registers and EEPROM
- Digital interface: 3.3V output, 5V tolerant inputs
- IC temperature monitoring/diagnosis
- Over-current and over-temperature indication

Benefits

- Configurable feature set
- Nonvolatile storage of system configuration
- Excellent electromagnetic compatibility (EMC) performance due to adjustable output slew rate control
- Low R_{DSon} of 6.6Ω
- Programmable limitation of driver output current
- DC/DC converter on-chip
- EEPROM read/write functionality within entire operating temperature range
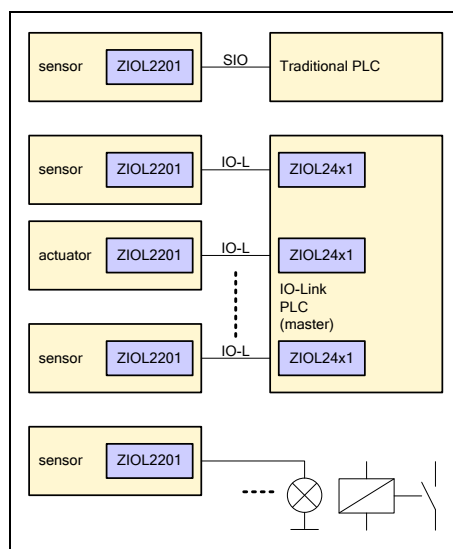- Space saving 4x4mm² 24-pin QFN

Available Support

- Evaluation Kits
- Application Notes

Physical Characteristics

- Operation temperature -40 to +85 °C
- Supply voltage 8.0 to 36.0 V
- QFN 24 package 4x4mm

ZIOL2201 Application Circuits

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* HV: high voltage (maximum power supply / signal swing is 36V).
[†] IDT is a member of the IO-Link Community: www.io-link.com.
[‡] IO-Link device wake-up.

January 26, 2016
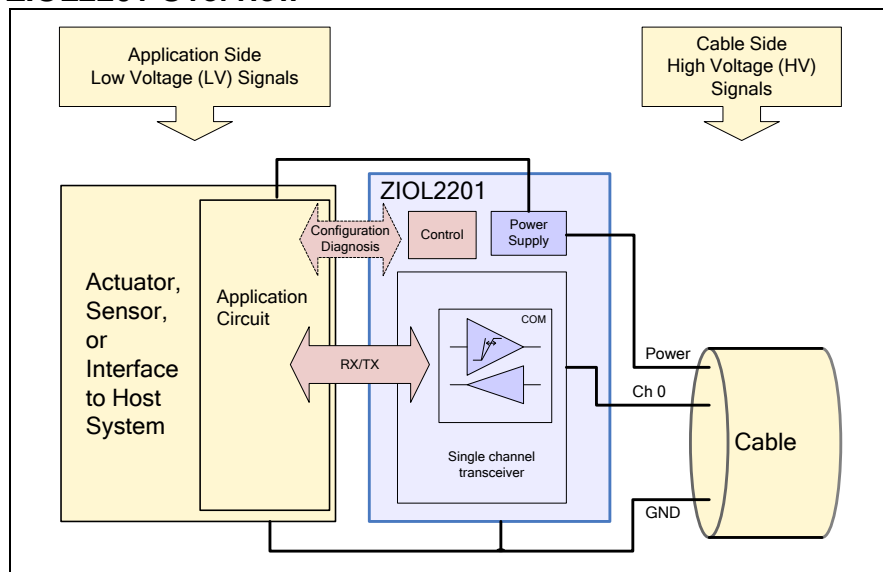
Typical Applications

In field applications, the ZIOL2201 acts as a universal cable driver. The ZIOL2201 can support IO-Link communications as a physical-layer transceiver (PHY) for IO-Link devices.

Common applications:

- 24V line driver/level shifter
- IO-Link-compliant devices

See the ZIOL2xxx IC Family Data Sheet *for detailed technical information.*

ZIOL2201 Overview

Ordering Information

Product Sales Code	Description	Package
ZIOL2201BI1R	Single Channel IO-Link-compliant HV Line Driver, 4x4mm QFN24	13" reel
ZIOL2201BI1W	Single Channel IO-Link-compliant HV Line Driver, 4x4mm QFN24	7" reel
IO-Link Lab Kit V2.0 #3600100858	ZIOL2401 Lab Kit for detailed laboratory evaluation: configurable IC/Communication/Controller Board, USB cable; software is available for download from www.IDT.com with a free customer login (see data sheet for details).	
ZIOL2401 Starter-Kit #3600100369	ZIOL2401 Starter Kit for product demonstration: USB stick, extension board, downloadable software	

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Document Revision History

Revision	Date	Description
2.20	August 27, 2015	Updates for order codes. Update for template and contact information. Update for current limitation minimum. Update for information about software download. Minor edits for clarity.
	January 26, 2016	Changed to IDT branding.

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