Brief Description

The ZIOL2211 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 ZIOL2211's control register during power-up. The ZIOL2211 also provides status information, such as overload and over-temperature conditions. An integrated SPI interface supports access to configuration and status registers.

The ZIOL2211 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 that is automatically loaded after power-on reset
- 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}: 6.6Ω
- Programmable limitation of driver output current
- EEPROM read/write functionality within entire operating temperature range
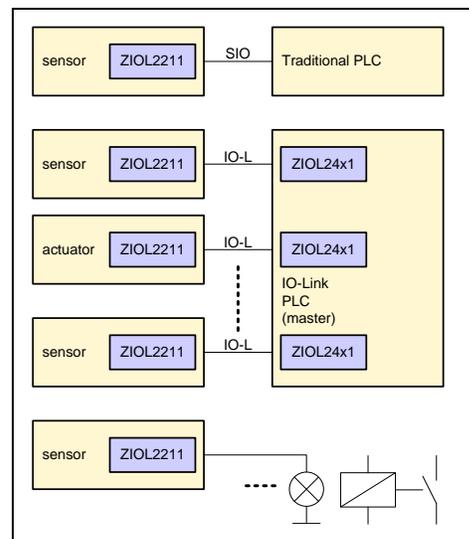- Space saving package options

Available Support

- Evaluation Kits
- Application Notes

Physical Characteristics

- Operation temperature: -40 to +85 °C
- Supply voltage: 8.0V to 36.0V
- Package options:
  RoHS-compliant QFN24 4x4mm
  WL-CSP35 2.5x2.5mm

ZIOL2211 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
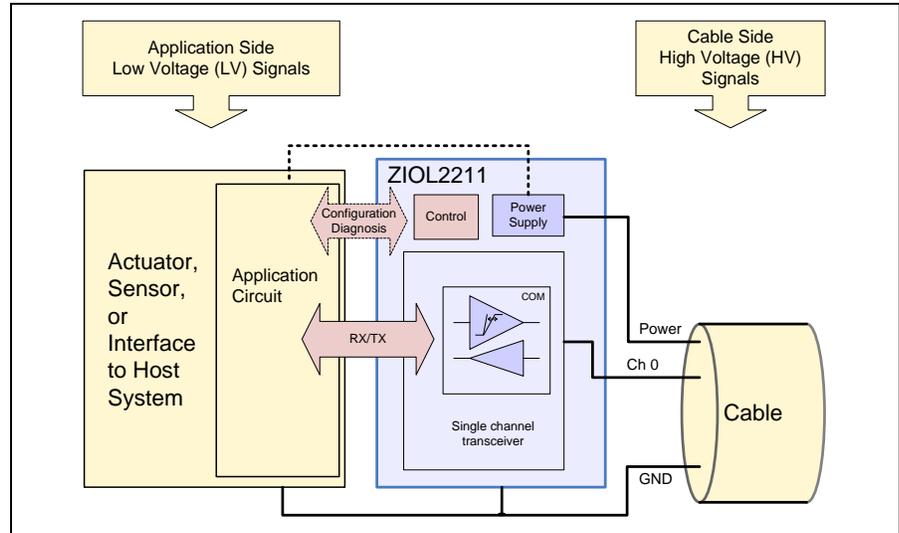
Typical Applications

In field applications, the ZIOL2211 acts as a universal cable driver. The ZIOL2211 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.*

ZIOL2211 Block Diagram

Ordering Information

Product Sales Code	Description	Package
ZIOL2211BI1R	Single Channel IO-Link compliant HV Line Driver, 4x4mm QFN24	13" reel
ZIOL2211BI1W	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 http://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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