L6360 & L6362A

A smart way to drive industrial sensors & actuators
Drivers for industrial sensors & actuators

L6360 & L6362A - Master & device for IO-Link and general purpose transceivers

- Transmit / receive digital data via a single 3-wire connection (PHY2)

- Support COM1 (4.8 kbaud), COM2 (38.4 kbaud) and COM3 (230.4 kbaud) modes

- Meet all the requirements of modern sensors and actuators:
  - Fast and easy configurability
  - Wide application spectrum
  - Minimum power dissipation for maximum efficiency
  - Full diagnostic and protection functions for enhanced reliability

- Enable Industry 4.0

Applications

- Drivers for digital sensors & actuators
- Input-output for programmable logic controllers (PLC)
Drivers for Industrial Sensor and Actuators

L6360 & L6362A- Master & device for IO-Link and general purpose transceivers

What’s IO-Link?

• Standard input-output (IO) technology worldwide (IEC 61131-9) for the communication with sensors and actuators based on the 3-wire connection

• Transmission of process and service data between control unit and sensors/actuators

Why IO-Link?

• Easy and compatible (universal): does not require special cables, fully compatible with existing networks, no field bus required

• High functionality: high performing process data transfer, automated parameter setting and extended diagnosis

• Easy handling with error detection & correction
Drivers for Industrial Sensor and Actuators

L6360 & L6362A - Master & device for IO-Link and general purpose transceivers

A smart way of driving 3 wires digital sensors

- Drivers for Industrial Sensor and Actuators
- L6360 & L6362A
- Master & device for IO-Link and general purpose transceivers
- A smart way of driving 3 wires digital sensors
- Connections to 8 or 32 bit Microcontrollers
- UART, GPIO
- Process variables (proximity, pressure, temperature...)
- Signal conditioning
- Diodes & Protections
- Analog front-end
Drivers for Industrial Sensor and Actuators

L6360 & L6362A - Master & device for IO-Link and general purpose transceivers

Features & Benefits

Wide application spectrum
- wide supply voltage range: 18-32.5 V (L6360), 7-36 V (L6362A)
- high output current capability up to 500 mA (L6360) 220 mA (L6362A)

Maximum design flexibility
- selectable output stage: high/low side, push-pull
- easy access and full configurability with I2C mode in L6360
- selectable linear regulators 3.3/5 V 50mA (L6360), 10mA (L6362A)

Minimum power dissipation & maximum efficiency
- best-in-class Rds (on) <1.6 Ω (L6362A); <2 Ω (L6360)

Maximum reliability
- full set of protection functions
- LED diagnostics sequence for fast reaction to fault conditions
Drivers for Industrial Sensor and Actuators

L6360 – Master for IO-Link and general purpose transceivers

- Direct access to line drivers / receivers for transparent operation
- Digital interface to 9 internal register for chip programmability & diagnostics
- LED Drivers + sequence generators embedded

Configurable power switch with very low $R_{\text{DSON}}$: 2 $\Omega$ max.
Receiver with digital filter and very precise configurable current sink
Configurable line driver with very low $R_{\text{DSON}}$: 2 $\Omega$ max. (HS); 1.2 $\Omega$ max. (LS)
Additional digital input with digital filter & current sink

Digital interface to 9 internal register for chip programmability & diagnostics

LED Drivers + sequence generators embedded
Drivers for Industrial Sensor and Actuators

L6362A - Device for IO-Link and general purpose transceiver

- Best in class for power losses: Low RDSON 1 Ω (HS) + 0.8 Ω (LS) @ 25°C
- Fast switching (up to COM3)
- Selectable Output stage:
  - High Side/ Low Side/ Push-Pull
- Fully protected
  - Reverse Polarity
  - Over-current / Non dissipative short circuit (cut-OFF delay time)
  - Thermal protection
  - Surge protection on chip
  - Under-voltage
Drivers for Industrial Sensor and Actuators

L6362A- Device for IO-Link and general purpose transceivers

- Full reverse polarity protection embedded on supply/receiver & driver pins
- 3.3V/5V Linear Vreg embedded
- Transparent interface
- Wake-up call detection embedded
- 3.3V/5V Linear Vreg embedded
- Surge protection on supply & communication line
- Very Low $R_{DS\text{ON}}$ power stages 1Ω typ
- High side/low side/push-pull power stage with fast demagnetization of inductive loads
- Fast communication COM3 supported (230.4kbps)
Drivers for Industrial Sensors and Actuators

L6360 & L6362A - Master & device for IO-Link and general purpose transceivers

Hands on development

8 or 32 bit Microcontroller

IO-Link communication master transceiver demonstration board based on the L6360
Order code: STEVAL-IFP016V2

Industrial Sensor

Diodes & Protections

8 or 32 bit Microcontroller

Signal conditioning

Analog front-end

IO-Link communication transceiver demonstration board based on the L6362A
Order code: STEVAL-IFP017V3

Hands on development

8 or 32 bit Microcontroller
Drivers for Industrial Sensors and Actuators

L6360 & L6362A - Master & device for IO-Link and general purpose transceivers

- **Package and packing**
  - L6360: QFN 26L 3.5 x 5
  - L6362A: DFN 12L 3 x 3

- **Part numbers**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Supply Voltage (V)</th>
<th>V_∞ (V)</th>
<th>Output current (A)</th>
<th>Max linear reg. (mA)</th>
<th>Output channels</th>
<th>Input channels</th>
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<tr>
<td>L6360 (Master)</td>
<td>18 to 32.5</td>
<td>3.3/5</td>
<td>0.5</td>
<td>65</td>
<td>2</td>
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<tr>
<td>L6362A (Device)</td>
<td>7 to 36</td>
<td>3.3/5</td>
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- **Support**

<table>
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<tr>
<th>Order Code</th>
<th>Description</th>
<th>Application notes</th>
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<tr>
<td>STEVAL-IFP016V2</td>
<td>IO-Link communication master transceiver demonstration board based on the L6360</td>
<td>AN4075</td>
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<tr>
<td>STEVAL-IFP017V3</td>
<td>IO-Link communication transceiver demonstration board based on the L6362A</td>
<td>AN4828</td>
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Further information and full design support at: [www.st.com/iolink](http://www.st.com/iolink)