

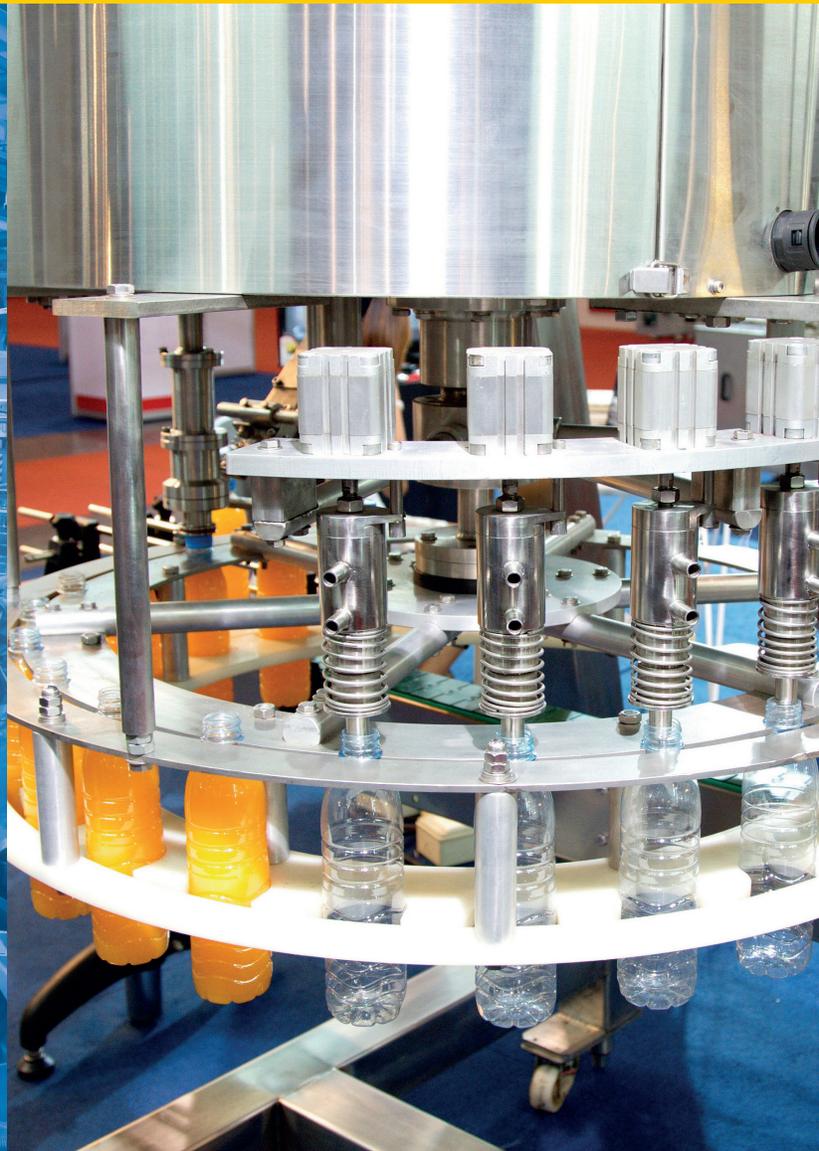
Your Global Automation Partner

TURCK

IO-Link: Simple, Seamless, Efficient



IO-Link



At TURCK, we understand that not every application is the same. That's why we dedicate ourselves to finding the optimal engineered solution for every application; not just the standard ones.

Listening to customers and developing solutions are part of what makes TURCK fast, flexible and easy to do business with.

Whether you need a single product or a full suite of innovative automation solutions our experience allows us to tap into an extensive amount of engineering knowledge and solve customer problems others can't.

Additionally, TURCK uses the most up to date manufacturing processes and quality materials so our products not only survive, but thrive in even the harshest applications.

That's the TURCK advantage.

85,000+
SOLUTIONS

50+
YEARS OF EXPERIENCE

2000+
EXPERIENCED SALES REPRESENTATIVES

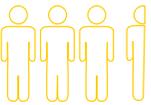
Pioneer in non-contact
sensing technology

Developed innovative **connectivity**
solutions in response to our sensor customer needs

Recognized need and advanced knowledge of harsh duty
environments lead to **I/O solutions**

**SUPPORT &
DEDICATED SERVICE**

LIFETIME WARRANTY

 **3,500+**
APPLICATION ENGINEERS

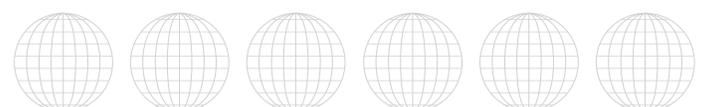
RESPOND & SOLVE over **1,200** inquiries
per day



Strategically placed manufacturing facilities

in the **USA** with **27** GLOBAL
SUBSIDIARIES

with **PARTNERS** in **60** FURTHER
COUNTRIES



IO-Link – Simple, Seamless, Efficient

More and more sensors and actuators today are already equipped with microprocessors which are used to control indication, for parameterization and the storage of configuration data. The next step is to overcome the bottleneck of the binary standard interface and make additional functions centrally accessible for the automation system.

For this reason a lot of well-known manufacturers from the field of automation have come together and developed a fieldbus independent communication interface for sensors and actuators:

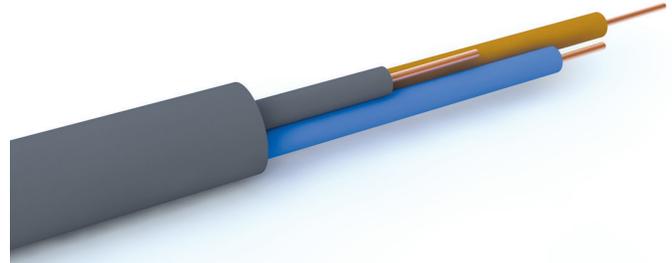
IO-Link. Compatibility with existing technologies was the primary objective during development in order to guarantee investment protection.

What is IO-Link?

IO-Link is based on a point-to-point connection between the sensor/actuator and an interface module. Up to now, the binary connection was only designed for transferring switching information, but IO-Link now allows two bytes to be transferred normally in a 2 ms cycle via a combined switching status and data channel. Other information can be exchanged in addition to the process values, such as parameters or diagnostics messages. This enables communication with sensors and actuators down to the “last meter” to be established for universal communication.

Standard Wiring

IO-Link does not require any special wiring. The sensors and actuators can continue to be connected using the proven, attractively priced and unshielded industrial three core cables. The operating modes available for selection are the standard switch mode and the communication mode.



Benefits

IO-Link users benefit from reduced machine costs, efficient processes and improved machine availability. TURCK is going to provide one of the most comprehensive IO-Link portfolios worldwide, from a variety of sensors, cables and junction boxes to programmable fieldbus and Ethernet solutions.

Reduced Machine Costs

- Reduced inventory due to intelligent multi-purpose devices
- Only one I/O module and one inexpensive standard cable required
- Reduced I/O footprint possible
- Displays and switches no longer required on devices
- Reduced engineering and assembly costs and automatic documentation of device parameters during the engineering phase



Engineering Tool Integration

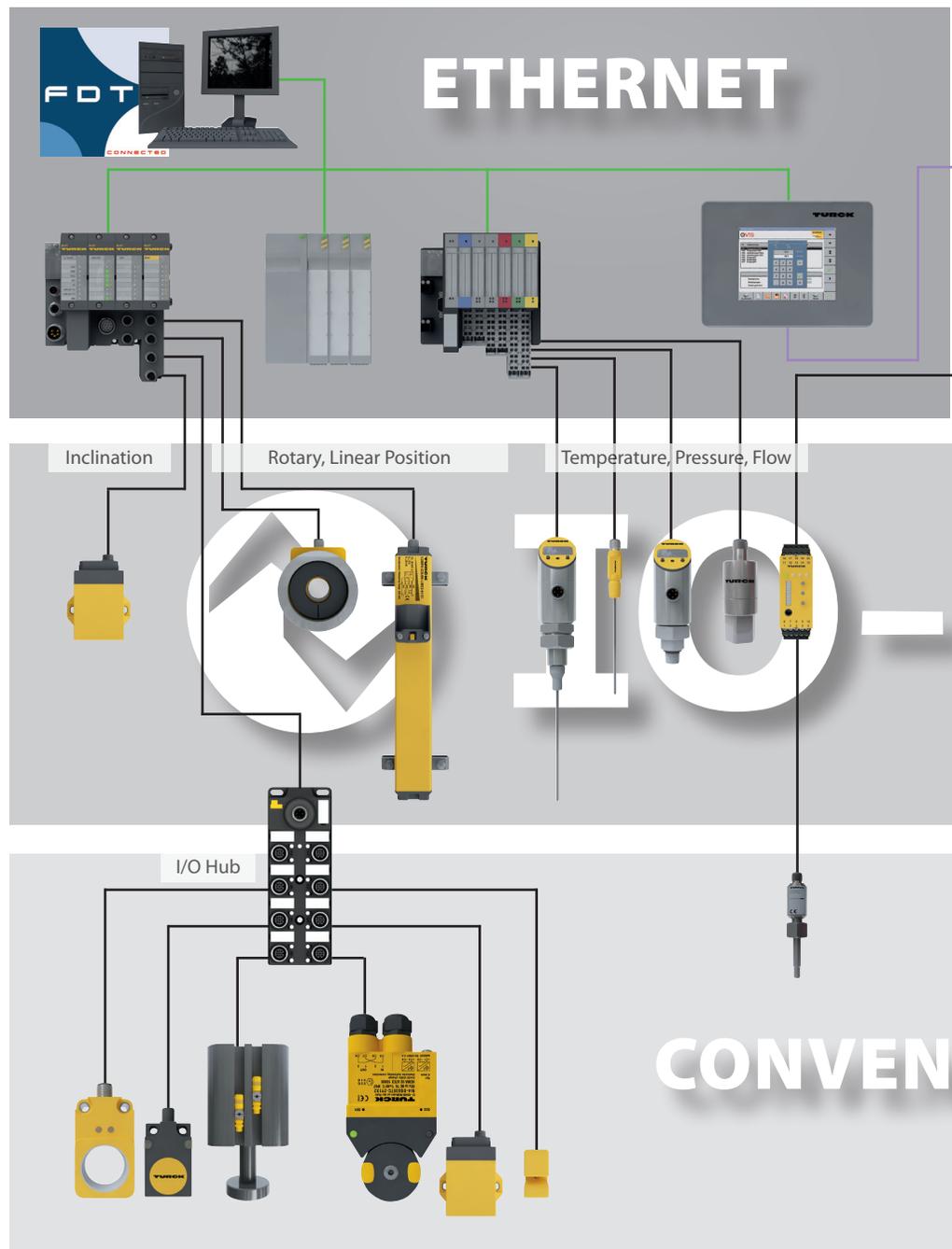
Standardized interfaces (DTM/IODD) implement seamless integration into engineering tools. Furthermore, integration into stand-alone tools such as Asset management or configuration tools is also made available. Connection into enterprise level tools is accomplished using standard ethernet mechanisms.

Device Identification

Integrated device identification ensures that in the case of component replacements the correct device has been installed. As each device contains detailed information regarding manufacturer, type etc., component replacement can be safely handled automatically.

Wiring

IO-Link uses the same standard unshielded 3-core cables with standardised pinning as conventional I/O. This eliminates problems with complex devices which have no pinning standards and often multipole connectors.



Efficient Processes

- Extensive parameterization options for just in time parameter changes to devices
- Efficient processes requiring different parameter sets for switching thresholds, gain, sensitivity and so forth due to differing production conditions
- Faster tool change operations



FIELD BUS



Ultrasonic Sensors

Inductive Coupler

Link



I/O Hub



Ethernet/Fieldbus Connection

IO-Link allows connection to most major fieldbuses, as well as Industrial Ethernet. TURCK offers solutions for the whole range, from master modules for its modular and block I/O systems featuring Multiprotocol Ethernet that feature PROFINET, EtherNet/IP and Modbus TCP in a single device.

Sensor Mounting

All IO-Link devices allow parameter changes and diagnostic evaluation within the engineering system or separate tools. Devices can now be mounted in the machine where they make sense for the application, not in areas that disrupt work flow to allow access to display or switches.

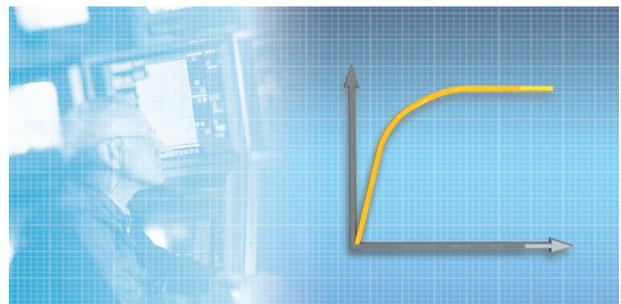
I/O Hubs

Allow the integration of standard 24 VDC devices into automation systems via IO-Link with TURCK I/O hubs. Variants for inputs and outputs are currently available, a version with universal digital I/O is under development.

ADDITIONAL I/O

Improved Machine Availability

- Comprehensive status information and diagnostic capabilities in the plant lead to drastically reduced machine downtime
- Enhanced information enables cost saving mechanisms such as predictive maintenance or asset management to be easily implemented
- Device replacement without manual intervention to parameterize the new unit alleviates the need for qualified personnel



TURCK – Your Value Added IO-Link Solution Partner

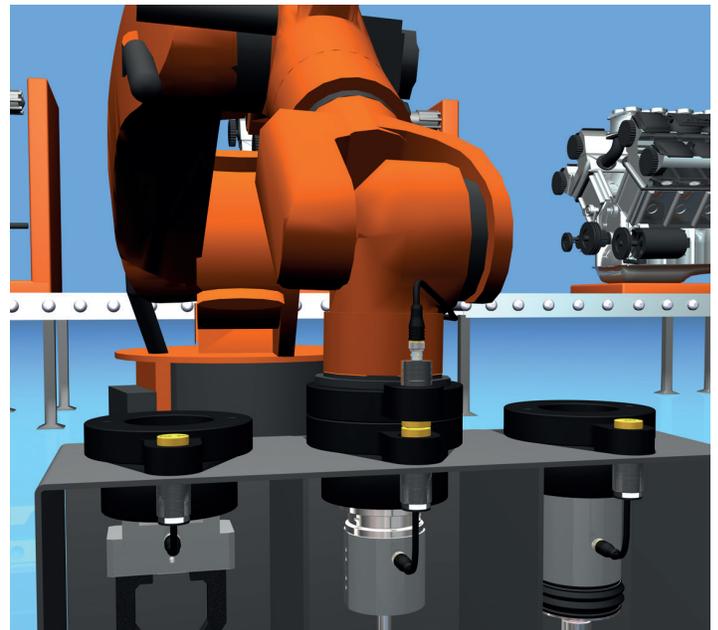
There are many manufacturers offering IO-Link products, so it might be not easy to find the most suitable partner for your needs. TURCK offers a wide variety of IO-Link solutions – from sensors through programmable field-bus and Ethernet gateways – but also a deep application knowledge, as the following example shows.

Tool Changer

Many applications require that parts of a machine are changed to accommodate different phases in the production cycle. This necessitates providing manifold connections between the main (fixed) part of a machine and the exchangeable part. The two elements of the machine must then be linked mechanically and electrically to provide power, pneumatics and I/O signals to enable data exchange within the machine.

The electrical connections require large multi-pin connectors and multicore cables to achieve this end. This complexity has its price: the connections regularly cause problems and are expensive to buy and maintain. The fact that the connections also require a high degree of accuracy regarding the mechanical alignment between machine components further increases machine costs.

Another difficulty with this arrangement is that, should it be required to distinguish between several variants of the exchangeable part, further I/Os are required – both in the I/O system and on the machine. All this increases costs, as well as complexity and the sizing of the connectors between machine parts.

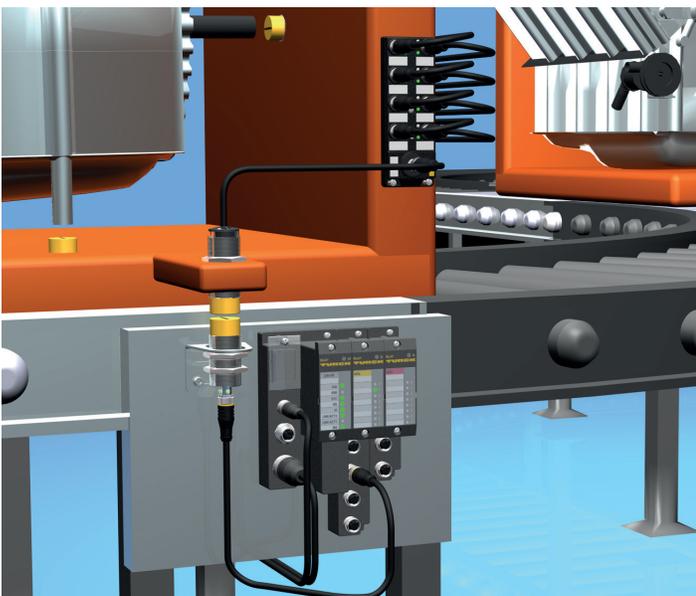


Robotic tool changer application

Value Added IO-Link Solution

TURCK inductive couplers which are capable of transferring both data and power over an air gap to resolve all of the mentioned problems. The contactless couplers eliminate the need for costly slip rings which are liable to wear or other mechanical connectors. But that's not the whole story.

Additionally, the possibility inherent in all TURCK IO-Link devices of allocating a so-called "Application Specific Tag" (part of the IO-Link specification), fulfills the requirement of identifying changeable parts without incurring further overheads and costs. Furthermore; as this built-in mechanism allows the use of alphanumeric information, it is likely that existing identification codes can be reused.



Skid application in an automotive plant

IO-Link product groups

Encoders, Inclination, and Linear Position Sensors



Fluid Sensors



Ultrasonic Sensors



IO-Link Masters



I/O Hubs



Inductive Couplers





USA

TURCK Inc.
3000 Campus Drive
Minneapolis, MN 55441
Phone: (763) 553-7300
Fax: (763) 553-0708
Application Support:
1-800-544-7769
E-mail: turckusa@turck.com



MEXICO

TURCK Mexico S. de R.L. de C.V.
Carr. Saltillo-Zacatecas km 4.5 Nave 35
Parque Industrial "La Angostura"
Saltillo, COAH. C.P. 25315
México
Phone: +52 (844) 411-6650
Fax: +52 (844) 482-6926
Local Toll Free: 01-800-01-88725
E-mail: mexico@turck.com



CANADA

TURCK Chartwell Canada Inc.
140 Duffield Drive
Markham, Ontario
Canada, L6G 1B5
Phone: (905) 513-7100
Fax: (905) 513-7101
Toll Free: 1-877-513-7769



AUSTRALIA

TURCK Australia Pty. Ltd.
Unit 5, 6-7 Gilda Court
Mulgrave, Victoria 3170
Australia
Phone: (+61) 3 9560 9066
Fax: (+61) 3 9560 1620
Local Toll Free: 1300 132 566
E-mail: turckaustralia@turck.com



GERMANY

WORLD HEADQUARTERS

Hans TURCK GmbH & Co. KG
Witzlebenstrasse 7
D-45472 Muelheim an der Ruhr
Federal Republic of Germany
Phone: (+49) 208-49 52-0
Fax: (+49) 208-49 52 264

www.turck.com