intelitek

INDUSTRY 4.0

Smart Sensor Lab

IoT · AUTOMATION · AI · CLOUD COMPUTING · BIG DATA · CYBERSECURITY

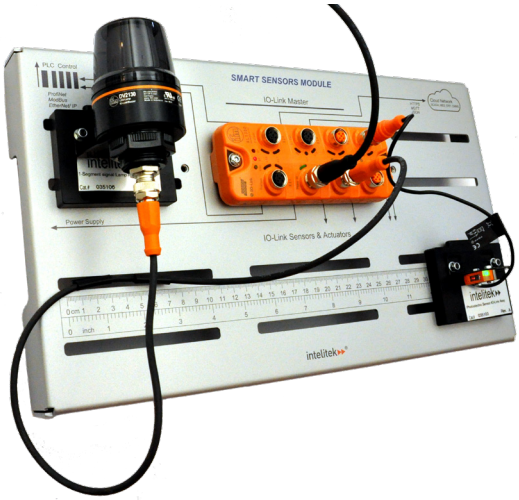
SMART SENSOR WITH IO-LINK HANDS-ON LAB FOR INDUSTRY 4.0 TRAINING PROGRAMS

A foundation of industry 4.0 is the use of real-time data collected from the industrial process like the plant floor. The data collected from smart sensors on equipment can be analyzed, formulated, and shared to all levels of plant operations, maintenance, and management. Before Industry 4.0, the utility of analog sensor data was limited.

Now with IoT, wired and wireless networks, and cloud communications, sensor data is accessible to people and to systems globally, enabling smart functionality.

Using IO-Link, actual sensor data can be collected and shared with control systems enabling predictive maintenance, advanced operations management, real-time flexible manufacturing and optimization planning.

Educating students on smart sensors and the communication systems related to sensors is essential for the Industry 4.0 workforce.



WHAT IS IO-LINK?

IO-Link is a worldwide open standard supported by sensors and control systems. Smart sensors with onboard processing produce detailed digital data that is sent over the IO-Link to the IO-Link master. The result is a fully digital path from the field-mounted sensor to the PLC and other control systems.

INTELITEK SMART SENSOR TRAINING SOLUTION

The Smart Sensor training lab enables educators to provide hands on and theory training to students in advanced manufacturing or process management programs to fully understand the world of sensors and the communications that connect them.

The solution includes advanced smart sensor lab hardware, lab exercises and software tools to work with Smart Sensors.

Standalone Lab – the kit can be used as a standalone lab to augment advanced manufacturing programs.

Sensor Integration Kit – the smart sensors can be installed and integrated into the Intelitek flexible manufacturing (FMS), computer integrated manufacturing (CIM), Mechatronics (JMTS), or mechanical maintenance trainers to upgrade them to Industry 4.0.

SKILLS YOU WILL LEARN:

- About sensors and smart sensors
- What is IO-Link
- What are the different types of protocol connections
- How to install Smart Sensors in your lab
- To use the parameter setting software
- To read the data received from sensors
- How to configure and customize the IoT Platform
- How to perform Predictive Maintenance

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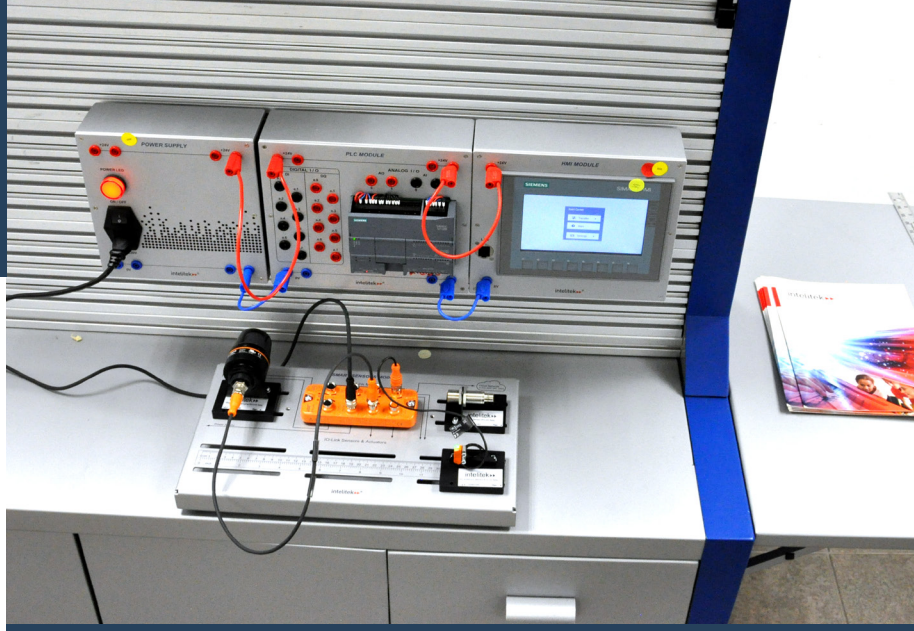


SOLUTION COMPONENTS

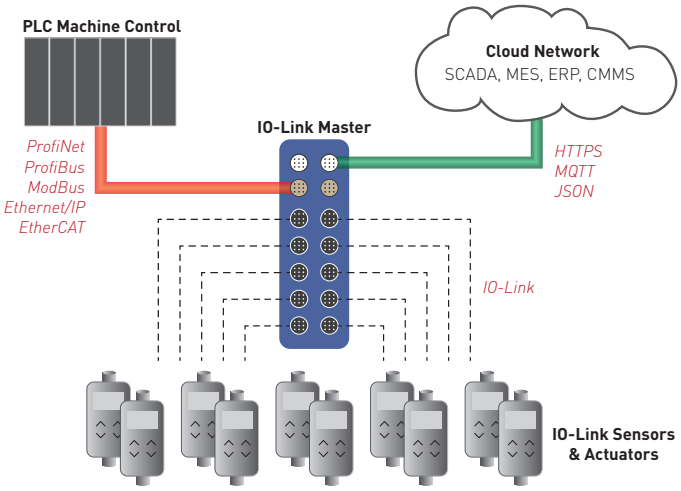
- Smart Sensors and Smart Actuators
- IO-Link Modules
- Smart Software
  - IO-Link Software for online and offline parameter setting of IO-Link sensors, actuators and modules
  - PLC Integration Software for set up of IO-Link systems with industrial controllers from various manufacturers
  - IoT Integration with IO-Link Software - allows set up and integration of IO-Link sensors to talk directly to the SCADA, MES, ERP and CMMS systems

ADVANTAGES OF IO-LINK SMART SENSORS

- Universal, international standard
- Easy set up and fast sensor replacement
- Error-proof transmission of exact measured values
- Controller and fieldbus independent
- Remote access to sensor parameters
- Condition monitoring/diagnostics

RECOMMENDED CURRICULUM

- Introduction to Industry 4.0
- Intro. to IoT & Connectivity for I4.0
- Advanced IoT & Connectivity for I4.0



Architecture of the Smart Sensor with IO-Link Lab Configuration

SMART SENSOR OBJECT DETECTION & PROXIMITY KIT

- IO-Link master
- Photoelectric distance sensor
- Inductive sensor
- Ultrasonic sensor
- Parameter setting software
- Accessories (PSU and cables)
- Learning materials and exercises

SMART SENSORS IDENTIFICATION KIT

- RFID reader and tags
- Signalling/Stack light (smart actuator)
- Learning materials and exercises

SMART SENSORS ADVANCED KITS

- IoT Condition Monitoring and Real Time Maintenance Software
- PLC & HMI

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