Smart Device Experimentation Package
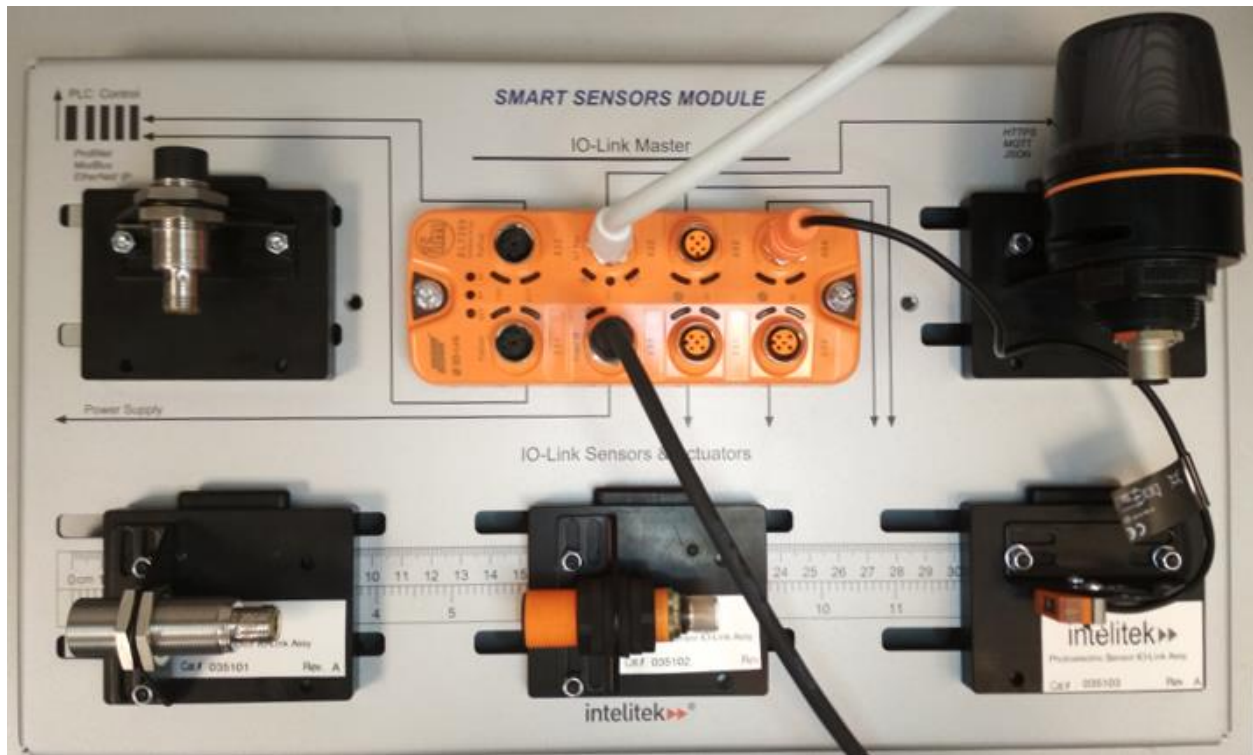

IO-LINK IDENTIFICATION KIT LAB ACTIVITY GUIDE

Catalog #34-8000-0020 Rev. B

intelitek▶▶®

INDUSTRY 4.0

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1. Getting Started

1.1. OVERVIEW

Thank you for purchasing the Intelitek *IO-Link Smart Device Experimentation Package* for use in your classroom or laboratory. IO-Link is a communication protocol common to industrial automation systems, and the *Smart Device Module with Identification Kit* is meant to provide a scaled-down IO-Link system that is usable in an educational setting, while still providing users with authentic, industry-recognized hardware and software.

This guide is meant to help you get started with the laboratory curriculum and provide you with access to the various lab activities.

1.2. INTEGRATING JMTS

The stand-alone lab activities do not require any additional materials besides those listed in the Materials section on page 5. However, components can be mounted onto a JobMaster Training System (JMTS) panel for ease of use.

For more information about the JMTS, its setup, and its accessory components, visit https://www.intelitekdownloads.com/Manuals/IndustrialMaint/ and download the relevant user guides.

An IO-Link master device mounted onto the JMTS.

1.3. PREREQUISITES

It is strongly recommended that you complete Intelitek's Level 1 and Level 2 Industry 4.0 courses before performing these lab activities.

1.4. WHERE ARE THE LAB ACTIVITIES?

You can find a list of lab activities in Section 4, List of Lab Activities, on page 7. All lab activities are available on downloadable and printable PDF documents.

2. Materials

Materials required for each lab activity are also listed at the beginning of each activity. Ensure that all materials are ready before the beginning of each lab period.

Provided Materials

Part	Part No.	Package	Amount
IO-Link Master AL1300 / AL1320	410495 / 410496	Proximity & Distance	1
230V/24V IO-Link Power Supply	430755	Proximity & Distance	1
IO-Link Master Power Cable with Banana Connection	040513	Proximity & Distance	1
M12-RJ45 Ethernet Cable	410492	Proximity & Distance	1
IO-Link M12-M12 Connection Cable	410493	Proximity & Distance	4
Inductive Sensor	035101	Proximity & Distance	1
Ultrasonic Sensor	035102	Proximity & Distance	1
Photoelectric Sensor	035103	Proximity & Distance	1
Steel Plate	110650	Proximity & Distance	1
Brass Rod	112872	Proximity & Distance	1
Marked Aluminum Cylinder	112713	Proximity & Distance	1
Blue Block	113023	Proximity & Distance	1
Plexiglass Block	113034	Proximity & Distance	1
Magnet	410404	Proximity & Distance	1
Stack Light	035106	Identification	1
RFID Read/Write Head	035104	Identification	1
Smart RFID Tag	410489	Identification	10

Additional Required Materials

Part	Amount
Wrench	1
Computer	1
Ethernet Switch (Recommended)	1
Ruler	1

Required Software

Package
LR Device
Ethernet Configuration Tool (Hilscher)

Intelitek software and documentation are available at http://intelitekdownloads.com.

3. Navigating the Lab Activities

3.1. OVERVIEW AND PREPARATION

Lab activities include tasks that must be performed using the IO-Link smart devices.

Participants are assigned with reading the lab activity PDFs (see Section 4, List of Lab Activities, below) and performing the tasks. Both participants and instructors are encouraged to read through the activities ahead of each lab period as preparation.

All activities require instructor verification to ensure that the work of the participants meet the requirements in the performance objectives. Performance objectives are listed at the beginning of each lab activity.

3.2. VIDEOS AND QR CODES

Lab activities contain QR codes such as the one below. Click these codes or scan them with your smartphone to watch instructional or illustrative videos that are relevant for the specific lab activity task.

An example QR code is given here:

Click or scan the above QR code to watch a video of the IO-Link master's IoT port blinking green.

4. List of Lab Activities

Below is a list of lab activities in the IO-Link Experimentation Package Curriculum. Ctrl + click the name of each activity to navigate to that lab activity.

> ⓘ **Note:** *Lab activities are password protected. Contact support@intelitek.com if you have not received passwords for the activities.*

Stand-Alone Lab Activities – Proximity and Distance

Lab Activity	Description
Connecting the IO-Link Master	Connect the IO-Link master to a PC and enable communication.
The Inductive Sensor	Connect an inductive sensor to the master and monitor sensor status.
The Ultrasonic Sensor	Connect an inductive sensor to the master and measure object proximities.
The Photoelectric Sensor	Connect the photoelectric sensor to the master and observe how different objects are detected.

Stand-Alone Lab Activities – Identification

The Stack Light	Connect the stack light to the master. Activate its buzzer and LED segment.
RFID Tracking	Write data to RFID tags with the RFID reader and read tag data.