

IO-Link Device Tool



User Manual

Version 4

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1. Introduction

The IO-Link device tool is used for the operation of IO-Link masters and connected IO-Link devices. The central technological element for the operation of the connected devices is the IO device description (IODD). Special for IO-Link is that this IO device description is mandatory. So a worldwide accepted integration possibility is available independently from the system environment.

The tool can be used as independent program as well as integrated in an engineering system. Most of the features are identical so that this manual describes all variants. The specific differences are marked accordingly.

2. Quick access

2.1 With a USB IO-Link Master

- Do **not connect** the USB IO-Link master.
- First install the IO-Link device tool.
- Now connect the USB IO-Link master to the PC.
- Confirm „Search Masters“ via the right mouse menu in the topology area.
- Now the USB IO-Link master is displayed.
- By double-clicking the entry, you can use it.
- Connect an IO-Link device to the USB IO-Link master. If you are not sure if the power supply from the USB is sufficient, please use the external power supply unit.
- Press the button „Go Online“.
- Press the button “Check Devices”.
- Now the IO-Link device is displayed. Transfer it then in the project engineering.
- By double-clicking in the user interface of the master or by selecting in the topology you can change the IODD interpreter.

3. Software Setup

3.1 User roles

3.1.1 Observer

The parameter selection „observer“ is displayed for the user. Write access is normally not allowed. This will be defined in the device description of the device manufacturer and may be different for different devices.

- The observer is not allowed to change passwords and its validity.
- There is not default password in the IO-Link device tool for the user role „observer”.

3.1.2 Maintenance

The parameter selection „maintenance“ is displayed for the user. Write access is normally restricted. This will be defined in the device description of the device manufacturer and may be different for different devices.

- In the user role “maintenance” it is not allowed to change passwords and its validity.
- The default password is 'maintain'.

3.1.3 Specialist

The parameter selection „specialist“ is displayed for the user. Write access is normally not restricted. This will be defined in the device description of the device manufacturer and may be different for different devices.

- The specialist is allowed to change passwords and its validity for all user roles.
- The default password is 'special'.

3.2 Import of the device description IODD

The Device descriptions can be imported from any space into the IO-Link device tool. The device descriptions have to be checked with a valid checker and must be marked accordingly. By the import the validity of the IODD XML data will be checked according to the marking “stamp”. Also all referenced graphic files must be available. Only when the files are complete and correct the import will start.

At present the IO-Link device tool supports

IODD V1.0.1 for IO-Link devices according to IO-Link V1.0 and

IODD V1.1 for IO-Link devices according to IO-Link V1.1.

IODD V1.0 shall not be used again and is therefore no longer being supported.

Menu	Description
extras/device description import	Opens the dialogue „import of the device description“.

Note/Warning: The IO-Link device tool uses a hidden directory as storage location for the imported IODDs. By the import the IODDs will be copied into it. Similar to a data base it is an internal working directory of the tool. Please **do not copy** data in the IO-Link directory **on your own!** Please always use the import function or the delete option with the right mouse button. Only then data consistency can be guaranteed if you create a collection of your used IODDs independently from the tool.

3.3 IO-Link Device Control

The IO-Link devices will be described by XML device descriptions. These device descriptions IODD (IO Device Description) will be imported in the device catalogue of the tool. The configuration and the parameterization can be made both offline and online. The settings are saved in a project file so that they are available e.g. for the documentation or a device exchange. The project file will be saved in the project directory with the used device descriptions.

There are tabs for general product characteristics ("Common"), process data, identification, observation, parameter and diagnostics.

3.3.1 Tab Common

General information about the IO-Link Device.

Command "DS store"

A "ParamDownloadStore" command is sent to the device. This means that the parameters of the device are tried to load into the data storage of the IO-Link master. If this is disabled for the associated port of the IO-Link master, the upload flag remains set until the IO-Link device is connected to a master whose Data Storage is enabled (upload or Enable). The pre-configured data of the IO-Link device are then uploaded. So the parameters of an IO-Link device, which is pre-configured with an USB IO-Link master, will automatically be transferred to the Data Storage. In a later device replacement then the data from the data storage will be played in the newly connected device.

Command "Operate"

If the port of the IO-Link master is configured so that the IO-Link device stays in pre-operate state, the device can be brought into operate state.

3.3.2 Tab Process Data

The behavior is adjusted according to the IO-Link master and the operation mode.

Offline:

Only the structure of the process data will be displayed. Values will not be displayed respectively can't be entered.

Online:

The process input data will be displayed cyclically. Depending on the interface the user can set if the tool can write the process output data. By the USB IO-Link master the process output data will always be written from the tool. By the operation with TCI the process data can only be read. By the stand-alone operation with Ethernet, the tool is in control if the SPS is not connected.

3.3.3 Tab Identification, Observation, Parameter, Diagnosis

Offline

The structure and the set values of the variables will be displayed. The variable values can be changed at R/W variables and will be saved in the project.

Online

By changing to online there is no automatic data transfer. With the button „check“ you can compare the data in the device with those in the project planning. With the buttons „upload“ and „download“ you can synchronize the data between tool and device. Only those device parameters will be transferred that are defined for the relevant active user role.

If the field „value“ of a variable is selected, the value will be taken from the device and the display will be updated.

In the context menu (right mouse button) the operation mode for the entering can be set. So it may be chosen if the value of a changed variable should be transferred immediately after the entry in the device or if the entries should be collected until they can be transferred by command (also in the context menu).

3.3.4 Tab Generic

This tab is used to operate the IO-Link device without IODD. The data is displayed as raw data and the address is set via index and subindex. The standard variables can be accessed easily by using the pull down table at index.

If no IODD exists, only that tab appears. Otherwise, it is available as a supplement. In particular, for the programming of the PLC, it is useful since you usually address here via index and subindex and must work with the raw data.

4. System Requirements

Hardware recommendations

processor:	dual core 2,5 GHz
working memory:	2 gbytes
hard drive:	500 mbytes free space
monitor:	1024 * 768

According to the IO-Link master

free USB 1.1 or 2.0 interface
Ethernet network interface

Operating system

Windows XP 32 Service Pack 3
Windows 7 32/64 Service Pack 1
Windows 8.1
Microsoft .Net Framework 2.0

By calling via TCI the system requirements of the engineering tool are valid as far as they go beyond the above mentioned requirements.

5. Appendix

5.1 Used standards and specifications

Available at: www.io-link.com:

IO-Link Communication Specification V1.0
IO-Link Interface and System Specification V1.1.2
IO Device Description V1.0.1 Specification
IO Device Description V1.1 Specification
IO-Link Test Specification V1.1.2