

Startup of IO-Link masters and IO-Link devices with the IOL-CONF software

Quick start guide



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UM QS EN IOL-CONF, Revision 01

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IOL-CONF is a browser-based parameterization software tool for the easy startup of IO-Link masters and IO-Link devices in the following product groups: Axioline F, Axioline Smart Elements and Axioline E.

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1 For your safety

This document describes the startup and use of the IOL-CONF software from Phoenix Contact.

Read this user manual carefully and keep it for future reference.

Make sure that the software is entirely suitable for the relevant application and the connected IO-Link masters and IO-Link devices.

Disregarding application notes or technical data can result in personal injury and/or property damage. Mounting, startup, and maintenance of the item may therefore only be performed by qualified specialist personnel who have been authorized for this by the system operator.

Disregarding the information in this document, using the product for anything other than the intended use specified below, and incorrect installation or handling can compromise the safety of people and systems.

Installation and connection must conform to the applicable national and international standards. The responsibility lies with whoever installs the software.

Any changes to the source code or to individual components of the software, which are not explicitly described in the instructions, will forfeit any right to claim support from Phoenix Contact.

1.1 Identification of warning notes and symbols



This symbol indicates hazards that could lead to personal injury. There are three signal words indicating the severity of a potential injury.

DANGER

Indicates a hazard with a high risk level. If this hazardous situation is not avoided, it will result in death or serious injury.

WARNING

Indicates a hazard with a medium risk level. If this hazardous situation is not avoided, it could result in death or serious injury.

CAUTION

Indicates a hazard with a low risk level. If this hazardous situation is not avoided, it could result in minor or moderate injury.



This symbol together with the **NOTE** signal word warns the reader of actions that might cause property damage or a malfunction.



Here you will find additional information or detailed sources of information.

1.2 Qualification of users

The use of products described in this user manual is oriented exclusively to:

- Electrically skilled persons or persons instructed by them. The users must be familiar with the relevant safety concepts of automation technology as well as applicable standards and other regulations.
- Qualified application programmers and software engineers. The users must be familiar with the relevant safety concepts of automation technology as well as applicable standards and other regulations.

1.3 Product changes

Modifications to the software are not permitted.

Incorrect operation or modifications can endanger your safety.

1.4 Security in the network



NOTE: Risk of unauthorized network access

Connecting devices to a network via Ethernet entails the risk of unauthorized access to the network.

Check whether unused communication channels can be deactivated. Assign passwords so that third parties cannot access the device and make unauthorized changes.

Due to its communication interfaces, the device should not be used in security-critical applications unless additional security appliances are used.

Please take additional precautions in accordance with the IT security requirements and standards applicable to your application (e.g., virtual networks (VPN) for remote maintenance access, firewalls, etc.) to prevent unauthorized network access.

On first request, you shall release Phoenix Contact and the companies associated with Phoenix Contact GmbH & Co. KG, Flachsmarktstraße 8, 32825 Blomberg, Germany in accordance with §§ 15 ff AktG (German Stock Corporation Act), hereinafter collectively referred to as "Phoenix Contact", from all third-party claims made due to improper use.

For the protection of networks for remote maintenance via VPN, Phoenix Contact offers the mGuard product range of security appliances, a description of which is provided in the latest Phoenix Contact catalog (<u>phoenixcontact.net/products</u>).

Additional measures for protection against unauthorized network access are listed in the AH EN INDUSTRIAL SECURITY application note. The application note can be downloaded at phoenixcontact.net/products.



The TCP/IP channel, the port to IOL-CONF, can be deactivated or activated on the bus coupler via the higher-level bus system. By managing rights in this way, you can prevent manipulative and unauthorized access to the IO-Link master and IO-Link devices.

2 Basic principles

2.1 The IOL-CONF software

The advantage of IO-Link masters and IO-Link devices is that manufacturers can design them more universally than conventional sensors or actuators. It is only when in use, i.e., during startup, that the IO-Link devices are parameterized for their specific application. To do this, Phoenix Contact provides the IOL-CONF parameterization software. IOL-CONF is a browser-based software tool for easy parameterization of IO-Link masters and IO-Link devices.

The IOL-CONF software supports operation of IO-Link masters from the modular Axioline automation system for the control cabinet (AXL F IOL8 2H and AXL SE IOL4). To use the software, the IO-Link masters must be operated on selected bus couplers of the Axioline F system.

Using the Phoenix Contact AXL F IOL8 2H and AXL SE IOL4 IO-Link masters, the software enables easy and efficient parameterization of IO-Link devices from Phoenix Contact and other manufacturers.

The software is intended to:

- Reduce startup costs
- Increase the availability of systems
- Facilitate the examination and evaluation of measured value trends

This has implications for startup and maintenance work.

2.2 Information about this document

This document describes the function of the IOL-CONF software.



For further information on the Axioline F modules and Axioline Smart Elements, please refer to the corresponding data sheets and user manuals.

Make sure you always use the latest documentation.

It can be downloaded via the item at phoenixcontact.net/products.

2.3 Scope of functions

Use of the IOL-CONF software offers the following options:

- ONLINE and OFFLINE parameterization of IO-Link masters from Phoenix Contact and any IO-Link devices over the network.
 - Setting parameters
 - Loading parameters from an IO-Link device
 - Writing parameters to IO-Link devices
 - Storing parameter records to a file
 - Loading parameter records from a file
 - Writing or copying parameters to multiple IO-Link devices
- Graphical representation of process values
 - Evaluating measured values
 - Writing process data
 - Exporting displayed measured values



NOTE: Unintentional switching of the outputs during parameterization

The behavior of the devices can change during parameterization. This applies in particular when process data from actuators is changed by the IOL-CONF software.

 Make sure that there is no negative impact on active processes and no risk to people or equipment at any time.



NOTE: Malfunction of the machine or system

In Industrial Ethernet networks that provide startup parameterization on the controller side, note the following:

Some of the parameters in the IO-Link masters and IO-Link devices that were written with IO-Link-CONF may be overwritten when the PLC is restarted.

 Make sure that there is no negative impact on active processes and no risk to people or equipment at any time.



No other client is permitted in an Ethernet network when operating IOL-CONF as a client. The Ethernet connection to the PLC must be disconnected.



The devices can only be parameterized by one IOL-CONF software tool at a time. Concurrent device parameterization with multiple IOL-CONF instances or other engineering systems is not supported.

2.4 Topology under IOL-CONF

The figure below shows an example topology of an Axioline F station with Axioline Smart Elements using the IOL-CONF software. Multiple Axioline F stations with Axioline Smart Elements can be used.



2.5 Interoperability

The IOL-CONF software can only be used with the following items:

Supported bus couplers:

Designation	Item number	As of hardware	As of firmware	Comment
AXL F BK PN TPS	2403869	02 or later	1.31 or later	
AXL F BK ETH	2688459	05 or later	1.30 or later	
AXL F BK EIP	2688394	05 or later	1.30 or later	
AXL F BK EC	2688899	05 or later	1.30 or later	Available from the start of 2022
AXL F BK S3	2701686	04 or later	1.35 or later	Available from the start of 2022
AXL F BK PN TPS XC	1068857	01 or later	1.31 or later	
AXL F BK ETH XC	2701949	05 or later	1.30 or later	

Supported IO-Link masters

(used downstream of one of the above bus couplers):

Designation	Item number	As of hardware	As of firmware
AXL F IOL8 2H	1027843	02 or later	1.01 or later
AXL SE IOL4	1088132	00 or later	1.00 or later

Supported IO-Link devices:

Any, all IO-Link devices of IO-Link specification V1.1.1 or later



Before purchasing the license for the IOL-CONF software, check whether the systems or devices you are using are suitable for parameterization via IOL-CONF.

3 Installation

3.1 System requirements

3.1.1 PC hardware

- Min. 2 GB RAM
- Min. 5 GB available hard disk space
- 1 free Ethernet port
 - 1 free USB 2.0 port The USB port is only required if the ESL STICK USB A software dongle is used to store the license. The IOL-CONF software itself does not use the USB interface to communicate with the bus couplers.
- CPU Intel Dual Core 2.0 GHz, minimum

3.1.2 PC software

- Operating system:
 - Microsoft Windows 7 SP1
 - Windows 8.1 und Windows 10
 - Windows Server 2008 R2 SP
 - Windows Server 2012
 - Windows Server 2012 R2
 - Windows Server 2016
- Web browser:
 - Google Chrome
 - Mozilla Firefox
 - Microsoft Internet Explorer 11
 - Microsoft Edge

3.1.3 Security mechanisms

Your company's security mechanisms may block the IOL-CONF software's access to https://io-link.com or port 2001.

To enable automatic access to the IODD finder portal, access to https://io-link.com must be allowed.

To enable IOL-CONF to connect to the Axioline F station, access to port 2001 must be allowed.

3.1.4 Hardware accessories

- IT network and necessary accessories for connecting the computer and network

1

The hardware accessories are not supplied as standard.

3.2 Installing the program on the hard drive

File "PHOENIX_IOL_CONF_x.x.x.xxx_INSTALL.exe" is used to install the IOL-CONF software on the PC.



x.x.x.xxx represents the version number of the software.

Administrator rights are required to install and operate the software. Contact your administrator or IT officer.

• Start file "PHOENIX_IOL_CONF_x.x.x.xxx_INSTALL.exe", e.g., by double-clicking it.

The Setup window opens. The license terms and conditions are displayed.

- Accept the license terms and conditions by clicking "Install".
- Follow the instructions of the installation routine. The program is installed.
- Following successful installation, close the Setup window.



Before you start the software for the first time, clear the browser cache.

3.3 Upgrading the software

- If upgrades are available for the software, they can be downloaded via the item at phoenixcontact.net/products.
- Follow the installation routine as described in Section 3.2.



The existing license key will still be valid.

3.4 Language selection

The language depends on the selected setting in your browser.

- In your browser settings, set the desired language for setting web pages.
- Restart the browser or reload the view.

3.5 Software license

The IOL-CONF software is subject to a license. A license entitles you to operate the IOL-CONF software on one PC.

You can download the IOL-CONF software via the Phoenix Contact e-shop. You can try out all the functions of the IOL-CONF software with the free 30-day trial. You will then need to purchase a license.



The free 30-day trial for the IOL-CONF software will only work on a physical host system (PC), it will not work on virtual machines.

When you order the IOL-CONF item (Item No. 1083065), you will receive a license ticket (ticket ID) by e-mail within 48 hours.

The "Phoenix Contact Activation Wizard" software tool is installed with the IOL-CONF software. It can also be found under Download in the Phoenix Contact e-shop. The "Phoenix Contact Activation Wizard" is used to activate and deactivate the software license on the PC. First, obtain a license ticket (ticket ID) for this PC. The Wizard stores the license ticket in encrypted format as a license on your PC.

Alternatively, you can store the license on a special license dongle. By inserting/unplugging this dongle, the license for the IOL-CONF software can be used on various PCs.



For more detailed information, please refer to the AH EN PHOENIX CONTACT ACTIVATION WIZARD - CHANGE NOTES application note at phoenixcontact.net/products.

3.5.1 Limited version

You have the option to try out the full scope of functions of the IOL-CONF software on a PC for a 30-day trial period.

To indicate that the software is in this license mode, "LIMITED" appears in the user interface.



"LIMITED" identification in the user interface

When the trial period expires, the warranted scope of functions of the software will no longer be available. You will be unable to use the software until a license has been activated on the same PC.

3.5.2 Software dongle for licenses

A license dongle with USB interface can be purchased as an option.

Software dongle: ESL STICK USB A, Item No. 1080084

You can store software licenses for the IOL-CONF software on the license dongle. Licenses can be used flexibly by moving the license dongle from one computer to another.

Use of a license dongle is recommended when using virtual machines. This means that licenses can still be used after virtual machines are copied or even if settings are changed on the virtual machine.

Using the "Activation Wizard" software tool, activate and deactivate licenses on the license dongle. You can also use the "Activation Wizard" to migrate licenses from a PC hard drive to a license dongle or vice versa.



Nevertheless, you still need to purchase a software license for IOL-CONF via the Phoenix Contact e-shop if using a software dongle.

3.6 Wiring the hardware and applying voltage



Please refer to the following documents when creating the station:

- Packing slips for the items used
- UM EN AXL F SYS INST user manual
- UM EN AXL SE SYS INST user manual
- Data sheets for the items used
- Set up the Axioline F station. It consists of a bus coupler, the I/O modules, and their peripherals, e.g., IO-Link devices.
- Establish an Ethernet connection from the bus coupler to the PC.
- Supply the system with voltage.

4 IOL-CONF software interface and function calls

4.1 Software interface

The interface is divided into the following areas:

- 1. Tool bar/information area
- 2. View
- 3. Device catalog
 - ONLINE
 - FILE (not shown in the screenshot below)
 - OFFLINE
- 4. Device-specific area

The areas are shown in the figure below.

IOL: IO-Lini	IO-LoONF IO-Link Configuration						Info about IOL-CONF					
	DEVICE CATALOGUE	<	Device parameters				8	⊗ ⊟	?			
Setup	ONLINE Devices +	Product ID: Vendor	Device ID: - (-)	Revision:	-/-			Device s	tate:			
Cockpit	OFFLINE Vendor			Doornpac								
2	3	4										

Figure 4-1 IOL-CONF software interface



Clicking the "Reload page" button in the web browser can interrupt the connection to the bus coupler of the Axioline F station. In this case, restart the web browser and the IOL-CONF software.

4.1.1 Tool bar/information area

The figure below shows the tool bar/information area.



Figure 4-2 Tool bar/information area

Info IOL-Conf	Info about IOL-CONF	Product and contact information, such as the software version, legal information, open-source license terms and conditions
	Read from device	Read IO-Link-specific parameters from IO-Link masters and devices
		Scan network for available IO-Link masters and IO-Link devices
⊗ ↓	Write to device	Write modified IO-Link-specific parameters to one IO-Link master or IO-Link de- vice
	Write to multiple selected devices	Write modified IO-Link-specific parameters to multiple selected IO-Link devices (from OFFLINE mode)
/	Load parameters from a file	Load IO-Link-specific parameters of one IO-Link master and/or one or more IO- Link devices from a project-specific Irp file.
8	Save parameters to a file	Save IO-Link-specific parameters of one IO-Link master and/or one or more IO- Link devices to a project-specific Irp file in the "Downloads" folder in Windows.
C	IODD Manager Search for updates	Import IODD files from the local storage location or from the ONLINE database (IODDfinder) Delete selected IODD files from the device catalog Search for updates to already installed IODD files
	Print displayed parame- ters	Print preview of parameters from the "Device-specific view"
?	User manual	Open the item page for the IOL-CONF software in the Phoenix Contact e-shop The latest software versions, information, and documentation can be accessed under Download.

4.1.2 View

The IOL-CONF software provides two different key functions.

- 1. Parameterization function for the IO-Link masters and IO-Link devices. This includes parameter archiving in files and writing to multiple identical IO-Link devices.
- 2. Monitoring function for process data, including the setting of outputs.

Use the following icons to switch between the two views for these functions.



Figure 4-3	"Parameterization"	and "Cockpit"	software views

Parameteriza-	View for the parameterization of IO-Link masters and/or IO-Link de-
tion	vices
Cockpit	Display mode for all online, available process data including visualiza- tion and the option to set outputs

4.1.3 Device catalog

In the device catalog, a distinction is made between OFFLINE and ONLINE views.

When there is an active TCP/IP connection between IOL-CONF and Axioline F stations, you can display and parameterize the Axioline F stations along with the connected IO-Link masters and IO-Link devices in the ONLINE area.

In the OFFLINE area of the device catalog, you can virtually create and parameterize IO-Link masters with connected IO-Link devices and save them to files. To do this, the description files (IODDs) of IO-Link masters and IO-Link devices from Phoenix Contact are stored in IOL-CONF (pre-installed).

You can extend the range of pre-installed IO-Link devices with subsequently imported IODDs, see "Importing device description files" on page 35.

DEVICE CATALOGUE	
Fast access	Q
ONLINE	
Devices	+
OFFLINE	
Vendor	
1	

Figure 4-4 "ONLINE" and "OFFLINE" device catalog views

4.1.4 Device-specific area

The parameters of the selected IO-Link master and IO-Link device are displayed in the device-specific area just as described by the loaded IODD associated with that device type.

<		Device parameters			_	⊘ ↑	()				3	₿	?
All	Product ID	AXL E IOL TC4/K M12	Device ID:	69131 d (176 d)		Revisi	on:	00 / 1.00			D	evice sta	te: 🔵
Identification	Vendor:	Phoenix Contact	Serial number	: 000000000		Descri	iption:	Axioline E I K)	IO-Link/a	analog o	converter	with 4 an	alog TC inp
Parameter	Cyclic poll	ing:											
System commands													
Resolution (0x0263)	Parameter	Value	Unit	Min	Max			Descrip	otion				Î
Unit (0x0264)	Standard Command	Device Reset		U	52	Ap	oplication	r opecnic rag					
Path calibration function: offset (0x266)	Standard Command	Restore Factory Settings											
Path calibration function:	Resolution. TC1 💉	0.01	~			R	esolutior	n					
reference (0x267)	Resolution. TC2	0.1	~			Re	solution						
Comparison of reference junctions	Resolution. TC3	0.1	*			Re	solution						
Cold junction temperature	Resolution. TC4	0.1	*			Re	solution						
(0x0268)	Unit. TC1 TC4	°C	*			Uni	it						
Comparison of reference junctions: offset (0x0269)	Path calibration function: offset. TC1		0	-32768	32767	Pa	ath calibr	ration function	: offset				
Comparison of reference junctions: reference (0x026A)	Path calibration function: offset. TC2		0	-32768	32767	Pa	ath calibr	ration function	: offset				
	Path calibration function: offset. TC3		0	-32768	32767	Pa	ath calibr	ration function	: offset				
	Path calibration function: offset. TC4		0	-32768	32767	Pa	ath calibr	ration function	: offset				
	Path calibration function: reference. TC1			-2147483648	2147483647	7 Pa	ath calibr	ration function	: referer	ice			
	Path calibration function: reference. TC2			-2147483648	214748364	7 Pa	ath calibr	ration function	: referer	ice			
	Path calibration function: reference. TC3			-2147483648	2147483647	7 Pa	ath calibr	ration function	: referer	ice			
	Path calibration function			0447400040									-
Device parameters													

Figure 4-5

Device-specific area

5 Parameterization of connected devices (ONLINE)

There are two ways to parameterize IO-Link masters and IO-Link devices in IOL-CONF:

- Direct parameterization of a connected IO-Link master and IO-Link device (ONLINE)
- Preparing and saving parameter records for future startup

Direct parameterization of a connected IO-Link master or IO-Link device (ONLINE)

Online operation of the IOL-CONF software is when:

An Axioline F station and at least one IO-Link device are connected to a PC/notebook with IOL-CONF via Ethernet. The Axioline F station consists of at least one bus coupler and one peripheral module with an IO-Link master function.

Contact with a connected IO-Link device is established from IOL-CONF via Ethernet (TCP/IP, port 2001) and the Axioline F station. A connection is established with further IO-Link devices sequentially one after the other.

If the associated device description file (IODD) for a connected IO-Link device is not preinstalled, IOL-CONF obtains it via the Internet from the IODD Finder (https://io-link.com). To enable automatic access to the IODD finder portal, access to https://io-link.com must be allowed.

With the help of the IODD, IOL-CONF enables you to conveniently parameterize the IO-Link device. The IO-Link devices retentively store their parameters that were set online.

Preparing and saving parameter records for future startup

You can prepare parameter records for IO-Link devices and save them to files. To do this, create virtual IO-Link devices and parameterize them. The bus configuration can be saved to files together with the set parameters and used during actual startup.

See Section "Preparing parameter records for startup (OFFLINE)" on page 29

i

5.1 Connecting the PC to the bus coupler

There are two ways to search for the bus couplers in the network.

Port 2001 must be enabled on the PC so that the IOL-CONF software can connect to the bus coupler. Make sure that this port is not blocked by a firewall.

Manual search directly via the IP address

- In the device catalog, click the "+" under "ONLINE".
- Enter the IP address of the connected bus coupler.

IOL-C	Info about IOL-CONF										
==	DEVICE CATALOGUE	< Device parameters				• 🖰	•	8	?		
Setup Cockpit	ONLINE Devices 2 OFFLINE Vendor	Product ID: Device 1D: - (·) Vendor: - Serial number: -	Revision	n: ·			De	vice stat	92		

Figure 5-1 Manual network scan

Automatic network scan

- In the device catalog, select "Devices" under "ONLINE".
- Click the "Read from device" icon.

The automatic network scan starts.

IOL IO-Link	-CONF (Configuration								Inf	about IOL	CONF	CON	TACT
:::	DEVICE CATALOGUE	<		Device parameters							\$	8	?
Setup	ONLINE Devices F OFFLINE Vendor	X	Product ID: Vendor:		Device ID: - Serial number: -	(-)	Revision Descripti	-/- on: -			Dev	rice stati	¥:
Cockpit		_											
				Finding device Read extended functions from d Found device: AXL F BK PN TP Search for IQ-Link master	ies Jevices S (192.168.0.6)								
					•								
		Figure 5-2	Search	ning for devices	s in the n	etwork							

All bus couplers found in the network are listed in the device catalog under "ONLINE".

IOL IO-Lini	CONF Configuration											Info a	about IOL-	-CONF	PHO	ENIX
	DEVICE CATALOGUE	<				Device parameters			@	⊗ ↓	<u>↑</u>	<u> </u>		¢;	₿	?
Setup	ONLINE Devices +				Product ID: Vendor:		Device ID: - (-) Serial number: -		Revis Desci	ion: ription:	-/-			De	vice stat	te:
	AXL F BK PN TPS (192.168.0.6) OFFLINE															
Cockpit	Vendor	1														
	-	-	Figure 5	5-3	Devic	es found after	a network	scan								

1

If the connection between the PC with IOL-CONF and a bus coupler has been established, you can manually change the IP address of the bus coupler. The connection between the PC with IOL-CONF and the bus coupler will be lost as a result. The bus coupler only adopts the new IP address once it has been restarted. The bus coupler is displayed.

• Click the bus coupler in the device catalog.

All Axioline F devices that are connected to the bus coupler are listed in the device catalog. Each Axioline F device represents an individual device. In addition, information about the bus coupler and its parameters is displayed in the device-specific area.

IOL IO-Lin	-CONF k Configuration							Info about IC	
:	DEVICE CATALOGUE	<		Device parameters				2 🕄 📼 🗄	🗞 🗏 🕐
Setup	ONLINE Devices + AXL F BK PN TPS (192.168.0.6) • -01: AXL F IOL8 2H •	All Parameter Network	Produ- Vendo Cyclic	ct ID: AXL F BK PN TPS r: Phoenix Contact polling:	Device ID: 4 Serial number:	4096 d (176 d)	Revision: Descripti	2 / 1.30 on: Headstation	Device state:
Cockpit	O2: 16 digital inpute O3: XXL SE IOL4 At : communication channel RS485 -05: Slot Cover Active -06 -07 -08 OFFLINE Vendor		Parameter IP address Subnet mask IP gateway address Ethernet name MAC address	Value 192.168.0.6 255.255.25 0.0.0 axl-f4ps 00.40.45.AB:55.CF		Min	Max Set IF Set S Set IF Name 9' (dig MAC	Descripti address of AXL F BK PN TPS ubnet mask of AXL F BK PN TP gateway address of AXL F BK for Chemnet Allowed character Ib). " (minus). " (point, separa address of AXL F BK PN TPS	on S PN TPS s: 72- (lower case letters), 10- tor between labels).
		Device parameters							

Figure 5-4 Axioline F station with bus coupler information and parameters

1

To use Axioline Smart Elements (AXL SE ...), you will need Axioline F backplanes (AXL F BP SE 4 or AXL F BP SE 6). Backplanes represent four or six devices even when unassembled. In the device catalog, from the ninth slot onwards, the empty slots are still included in the numbering but are not represented graphically.

5.2 Starting up the IO-Link master

 In the device catalog, click on the AXL F IOL8 or AXL SE IOL4 IO-Link master installed in the station.

In the device-specific area, you will see the settings with the parameterization options for the IO-Link master. In the delivery state, each port is set to DI mode.

- To operate IO-Link devices, set the corresponding port to "IO-Link".
- Select "IO-Link" from the drop-down menu.
- Then click the "Write to device" button.

IOL- IO-Link	CONF										Info	about IOL	-CONF		ENIX NTACT
	DEVICE CATALOGUE	<		Device parameters						9	🎇 📁	8	Q	8	?
Setup	ONLINE Devices + AXL F BK PN TPS (192.168.0.6) • -01: AXL F IOL8 2H •	All Parameter Port 1 Port 2	Pro Ver Cy	oduct ID: AXL F IOL8 2H ndor: Phoenix Contact rclic polling:	Device Serial	e ID: 1 number: 0	180 d (176 d) 1123456789		Revision Descripti	: ion:	01 / 1.02 IO-Link Master		De	evice sta	te:
Cookpit	-0-1 / / / / / / / / / / / / / / / / / / /	Port 2 Port 3 Port 4 Port 6 Port 7 Port 8	Parameter Port1 mode Port2 mode Port3 mode Port4 mode Port6 mode Port6 mode	Value DI	* * * * *	Unit	Min	Max	Desc Port n Port n Port n Port n Port n	riptior node node node node node node	'n				
		Device parameters													



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Note the following for controllers that supply the IO-Link master with a startup parameterization (e.g., PLCnext Control or S7):

- If you have changed parameters on the port of the IO-Link master with the IOL-CONF software and then operate the master on a controller, the settings previously made with IOL-CONF will be overwritten.
- Since the controller has priority, make all settings in the engineering of the controller.
- In the following cases, the controller writes the parameter telegram to all connected field devices again:
 - Restarting the controller
 - Re-establishing communication after network interruption to a field device
 Voltage reset on a field device

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Setup	ONLINE Devices AXL F BK PN TPS (192.168.0.6) -01: AXL F IOL8 2H	+	All Parameter Port 1	Product IE Vendor: Cyclic pol	D: AXL F IOL8 2H Phoenix Contact Iling:	De Sei	vice ID: rial number:	180 d (176 d) 0123456789		Revi Desc	sion: cription:	01 / 1.1 IO-Lini)2 : Master		De	wice sta	te:
Cockpit	-01: AXL E IOL TC4/K M12	1	Port 3	Parameter Port1 mode	Value IO-Link	~	Unit	Min	Мах	P	ort mode		De	escription	n		
	-02 -03 -04 -05 -06 -07 -08 OFFLINE Vendor	~ ~ ~ ~ ~ ~ ~ ~	Port 4 Port 5 Port 6 Port 7 Port 8	Port1 IO-Link. Device ID Port1 IO-Link. Vendor ID Port1 IO-Link. Compatibility check and data storage Port1 IO-Link. Cycle time Port1 alarm Port1 IO-Link diagnostics Port2 mode Port3 mode Port3 mode Port5 mode Port5 mode Port6 mode Port8 mode	No device check As fast as possible Enabled D1 D1 D1 D2 D2 D1 D1 D1 D1 D1 D1 D1 D1 D1 D1 D1 D1 D1			0	1677721 65535	5 	O-Link De O-Link Ve Vegree of the ehavior D-Link cyccycle Report or li, Report or li,	evice ID to endor ID ti severity o de time gnore une gnore IO-	validate	ontibility cl	neck and t	he data s	storage
			Device parameters														

As soon as the port is switched to IO-Link, the list is extended to include additional necessary parameters, see figure below.

Figure 5-6 Parameters of the IO-Link master

Once the port has been switched, the software scans the station again. All connected IO-Link masters and IO-Link devices are displayed in the ONLINE area of the device catalog.

5.3 Starting up an IO-Link device

- In the device catalog, click an IO-Link device, e.g., AXL E IOL TC4/K M12, see figure below. All the parameters of the IO-Link device are displayed in the device-specific area.
- Set the parameters in accordance with your application.
- Click the "Write to device" icon.

The display in the device-specific area of IOL-CONF is based on device-specific description files (IODDs). The following message appears when an IO-Link master or IO-Link device is connected, but there is no corresponding IODD for it in the IOL-CONF software:



For further information on loading device description files, please refer to Section "Updating the device description file (IODD) and device catalog" on page 35.

IOL- IO-Link	CONF														In	fo über IOI	-CONF	₽ B B B B B B B B B B B B B B B B B B B	ICENIX NTACT
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Perametrianung	ONLINE		Alle		Geräten	ame:	AXL E IOL TC4/K M12	Gerät	e ID: 69	9131 d (176 d)		Revi	sion:	00/	1.00		G	erätesta	atus: 🔵
Farametrierung	Geräte	+	Identifikation	5 M	Herstell	er:	Phoenix Contact	Serier	nnummer: 00	00000000		Besc	chreibung	g: Axio	line E-IO-L	ink/Analog	-Konverte	r mit 4 a	nalogen TC-
\frown	AXL F BK PN TPS	0		u str	Zyklisch	e	_							(199	N)				
5-1	(192.168.0.6)		Parameter	- />	Abilage														
Cockpit	-01: AXL F IOL8 2H		System Kommandos				1975-04		E la la site										
	M12	1	Auflösung (0x0263)	Parameter	T		wert		Einneit	Min	Max		المعالمعام	Beschr	eibung 6. T				
	-02	1	Einheit (0x0264)	Application Specific	rag					v	32		мррисацо	n Speci	nc rag				
	-03	1	Streekeeshalaish: Offset (0:366)	Standard Command		. 5	Device Reset												
	-04	1	Streckenabgieich, Offser (0x266)	Standard Command			Restore Factory Settings												
	-05	1	Streckenabgleich: Referenz (0x267)	Auflösung. TC1		/	0,01	*					Auflösun	g					
	-06	1	Varalaichestallanahalaich	Auflösung. TC2		0,),1	~				A	Auflösung						
	-07	1	Vergreichastellenabgreich	Auflösung, TC3		0,).1	~				A	Auflösung						
	-08	1	Vergleichsstellentemperatur (0x0268)	Auflösung TC4		0	1	~					uflösung						
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	Hersteller		(0x0269)	Einheit, TC1 TC4			°F	*					Einheit						
			Vergleichsstellenabgleich: Referenz (0x026A)	Streckenabgleich: C TC1	iffset.			0		-32768	32767	:	Streckena	abgleich	Offset				
				Streckenabgleich: C TC2	iffset.	•	20	0		-32768	32767	:	Streckena	abgleich	: Offset				
				Streckenabgleich: C TC3	iffset.	•	300	0		-32768	32767		Streckena	abgleich	: Offset				
				Streckenabgleich: C TC4	iffset.			0		-32768	32767	:	Streckena	abgleich	Offset				
				Streckenabgleich: Referenz. TC1					-	2147483648	214748364	47	Streckena	abgleich	Referenz				
				Streckenabgleich: Referenz. TC2					-	2147483648	21474836	47	Streckena	abgleich	Referenz				
				Streckenabgleich: Referenz. TC3					-	2147483648	214748364	47	Streckena	abgleich	Referenz				
				Strockonabaloich:															*
			Geräteparameter																

Figure 5-7 Parameters of the IO-Link device

When you change parameters in the device-specific area, the pencil icon indicates the change.

To ensure that the change is not lost, save the parameters to an IO-Link device (ON-LINE) or a file (OFFLINE).



Note the following for controllers that supply the IO-Link master with a startup parameterization (e.g., PLCnext Control or S7):

- If you have changed parameters of the IO-Link device with the IOL-CONF software and then operate the device on a controller, the settings previously made with IOL-CONF will be overwritten.
- Since the controller has priority, make all settings in the engineering of the controller.
- In the following cases, the controller writes the parameter telegram to all connected field devices again:
 - Restarting the controller
 - Re-establishing communication after network interruption to a field device
 - Voltage reset on a field device

6 Preparing parameter records for startup (OFFLINE)

You can use the IOL-CONF software to prepare parameter records for IO-Link masters and IO-Link devices and save them to files before creating the actual machine. To do this, create virtual IO-Link devices and parameterize them. Then save the prepared parameter records to a file. During startup, you can use the parameter records to copy them to the IO-Link masters and IO-Link devices. An IO-Link master or IO-Link device does not need to be present on the PC/notebook with IOL-CONF in order to perform this preparatory step. Using the "OFFLINE" category, create virtual IO-Link devices and parameterize them. Or parameterize an IO-Link master together with its IO-Link devices. The parameter records generated in this way are saved to Irp files under "Downloads".

6.1 Preparing and saving parameter records

You have the option of creating a file in OFFLINE mode. There, you can save the parameters of an IO-Link device or the parameters of an IO-Link master together with its devices. If the parameter record of an IO-Link master is written to a file, the parameters of the master and all the parameters of the devices configured for it will be saved. If you select just one device in the OFFLINE catalog, the parameters of this device only will be saved to a file.

 Under "Vendor" in the OFFLINE area of the device catalog, select your IO-Link master or your IO-Link device.

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For a device to be displayed, its device description file (IODD) must be loaded in IOL-CONF. To find out how to load IODDs, please refer to Section "Updating the device description file (IODD) and device catalog" on page 35.

IOL-	CONF									Info about IC	L-CONF	2 PHC	ENIX TACT
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Setup	ONLINE Devices OFFLINE Vendor Phoenix Contact GmbH	All Parameter Port 1 Port 2	Product II Vendor:	: AXL SE IOL4 Phoenix Contact GmbH & Co. KG	Device ID: Serial number:	6918 d (176 d)	R	evision: escription:	IO-Link M	aster	De	evice sta	te:
Соскрії	& Co. KG	Port 3	Parameter	Value	Unit	Min	Max			Description	on		
	AXL SE (0) 4 (1088133)	Port 4	Port1 mode 🖉	IO-Link	*			Port mode	9				
	-01	1 0114	Port1 IO-Link. Device ID		0	0	16777215	IO-Link De	evice ID to va	alidate			
	-02	1	Port1 IO-Link. Vendor ID		0	0	65535	IO-Link Ve	endor ID to v	alidate			
	-03	/	Port1 IO-Link. Validation / DataStorage	No check and clear	*			IO-Link Vali	idation / Dat	a Storage			
	-04	1	Port1 IO-Link. Cycle time	As fast as possible	*			IO-Link cyc	le time				
			Port1 alarm	Enabled	~			Report or ig	gnore unexp	ected port state			
			Port1 IO-Link diagnostics	Enabled	~			Report or ig	gnore IO-Lin	k device diagno	stics		
			Port1 IO-Link device substitute value	Apply substitute value of the connected	*			IO-Link dev output proc	vice substitut cess data	e value behavi	or (PDOUT) in case (of invalid
			Port1 Input substitute value	Set input value to zero value	*			Input subst data	itute value b	ehavior (PDIN)	in case of i	nvalid IO	-Link
			Port2 mode	DI	*			Port mode					
			Port3 mode	DI	*			Port mode					
			Port4 mode	DI	*			Port mode					
		Device parameters											



When you have selected an IO-Link master, you will see its settings with the parameterization options. Each port is set to DI mode by default.

- Set the corresponding port to "IO-Link" by selecting "IO-Link" from the drop-down menu.
- Connect an IO-Link device to the IO-Link port.
- Select an IO-Link device via the pencil icon next to the corresponding port.
- Apply it to the OFFLINE configuration with "OK".

IOL- IO-Link	CONF Configuration		Info about IOL-CONF
	DEVICE CATALOGUE Fast access	< Device parameters	😤 🌻 🚆 📼 💾 🐼 🖨 🕐
Setup	ONLINE Devices OFFLINE Vendor Phoenix Contact GmbH & Co. KG AXL SE AXL SE AXL SE AXL SE IOL4 (1088132)	All Product ID: AXL SE IOL4 Device ID: 6918 d (176 d) Parameter Vendor: Phoenix Contact GmbH & Co. Serial number: Port 1 Select device Product name X Port 2 Select device Product name X Port 3 Product name X Product name Port 4 Pheenix Contact GmbH & Co. KG AXL EIOL AI1 I M12 5 A	Revision: Device state: Description: IO-Link Master Description Port mode
	-01 -02 -03 -04	Preserv. Centrad Greini & G.o., KG AAL E DOL ALL UNIZ & Preverv. Centrad Greini & G.o., KG AAL E DOL ALL UNIZ S Preverv. Centrad Greini & G.o., KG AAL E DOL ADL UNIZ S Preverv. Centrad Greini & G.o., KG AAL E DOL ADL UNIZ S Preverv. Centrad Greini & G.o., KG AAL E DOL ADL UNIZ S Preverv. Centrad Greini & G.o., KG AAL E DOL ADL UNIZ S Preverv. Centrad Greini & G.o., KG AAL E DOL ADL UNIZ S Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ S Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ P Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ P Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ P Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ P Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ P Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ P Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ P Preverv. Centrad Greini & G.o., KG AAL E DOL CON UNIZ P Preverv. Centrad Greini & G.o., KG Centrad Greini & G.o., KG Preverv. Centrad Greini & G.o., KG Centrad Greini & G.o., KG Preverv. Centrad Greini & G.o., KG <td< th=""><th>IO-Link Device ID to validate IO-Link Vanidor ID to validate IO-Link Vanidation / Data Storage IO-Link voice time Report or ignore unexpected port state Report or ignore unexpected port state Report or ignore IO-Link device diagnostics IO-Link device substitute value behavior (PDOUT) in case of invalid output process data Input substitute value behavior (PDIN) in case of invalid IO-Link data Port mode Port mode</th></td<>	IO-Link Device ID to validate IO-Link Vanidor ID to validate IO-Link Vanidation / Data Storage IO-Link voice time Report or ignore unexpected port state Report or ignore unexpected port state Report or ignore IO-Link device diagnostics IO-Link device substitute value behavior (PDOUT) in case of invalid output process data Input substitute value behavior (PDIN) in case of invalid IO-Link data Port mode Port mode
		Device parameters	

Figure 6-2 Device catalog OFFLINE: selecting an IO-Link device

- Select an IO-Link device in the device catalog.
- Set the parameters of the IO-Link device in the device-specific area.

IOL- IO-Link	CONF													Info	about IOL-	-CONF	PHO	ENIX
	DEVICE CATALOGUE Fast access	Q	<			Device parameters					\bigotimes_{\uparrow}	©	S	<i>_</i>	8	•	₿	?
Setup	ONLINE Devices OFFLINE Vendor Phoenix Contact GmbH	+	All Identification Parameter System commands	Vend	uct ID or:	AXL E IOL TC4/K M12 Phoenix Contact GmbH & Co. KG	Device Serial	e ID: number:	69131 d (176 d)		Revis Desc	ion: ription:	Axioline K)	e E IO-Lir	nk/analog o	De converter v	wice stat	æ: alog TC ing
Cockpit	& Co. KG AXL SE AXL SE IOL4 (1088132) -01: AXL E IOL TC4/K	/	Resolution (0x0263) Unit (0x0264) Path calibration function: offset	Parameter Application Specific Tag Standard Command		Value		Unit	Min 0	Max 32	Α	pplication	Des Specific	cription Tag				^
	M12 -02 -03 -04	1 1 1	(0x266) Path calibration function: reference (0x267) Comparison of reference junctions	Resolution. TC1 Resolution. TC2 Resolution. TC3	-	0.1 0.01	* *				R R	Resolutior esolution esolution	ו					
			Cold junction temperature (0x0268) Comparison of reference junctions: offset (0x0269) Comparison of reference	Resolution. TC4 Unit. TC1 TC4 Path calibration function: offset. TC1 Path calibration function:		0.01	× 10		-32768	32767	R	esolution Jnit 'ath calibr	ation func	tion: offs	et			
			junctions: reference (0x026A)	offset. TC2 Path calibration function: offset. TC3 Path calibration function: offset. TC4	1	30	00		-32768 -32768 -32768	32767 32767 32767	P	'ath calibr 'ath calibr 'ath calibr	ation func ation func ation func	tion: offs tion: offs	et et			
				Path calibration function: reference. TC1 Path calibration function: reference. TC2 Path calibration function: reference. TC3			0 0		-2147483648 -2147483648 -2147483648	214748364 214748364 214748364	47 F 47 F 47 F	'ath calibr 'ath calibr 'ath calibr	ation func ation func ation func	tion: refe tion: refe tion: refe	rence			
			Device parameters	Path calibration function:														+

Figure 6-3 Device catalog OFFLINE: parameterizing an IO-Link device

- Save all the parameters of a device selected in OFFLINE mode to a file.
- To do this, click "Save parameters to a file".

The parameters are stored in the "Downloads" folder in Windows. The item number of the IO-Link device is used as the file name, as per the order number entry in the IODD. For each device type, only one prepared parameter record can be saved as an Irp file.

6.2 Startup with prepared parameter record (loaded from lrp file)

There are two ways to copy the prepared parameter records to the IO-Link master and IO-Link devices in the IOL-CONF software. To do this, the parameter records must be in an Irp file.

1 Distributing the parameter records to multiple IO-Link masters and IO-Link devices

The "FILE" area is opened in the device catalog and the device or the devices is/are displayed there with the parameters from the loaded file. You can save the parameter record to one or more identical devices.

2 Assigning parameters directly to an IO-Link master and IO-Link devices

Before loading a parameter record under "ONLINE", select an IO-Link master or an IO-Link device that matches it. In the IOL-CONF interface, update the displayed parameters of the connected device directly.



When you load a file with an IO-Link master, the preconfigured IO-Link devices for it will also be loaded. When you load a file with just one individual device, only its parameters will also be displayed.

6.2.1 Distributing the parameter records to multiple IO-Link masters or IO-Link devices

- Before loading a file in the device catalog, select a device that does **not** match the contents of the file.
- Click the "Load parameters from a file" icon.



Figure 6-4 Loading an Irp file with prepared parameter record

- Select the file containing the parameter record that belongs to your device.
- Click "Open".

The new "FILE" category opens in the device catalog. The IO-Link masters and/or IO-Link devices are displayed with the parameters from the loaded file.

- With just a click, you can write identical parameter records to one or even multiple identical devices.
- Save the parameter record to a device.

Device Ant Locule Product Dr. Device parameters Product Dr. Serial number: Product Dr. Dr. Product Dr. Dr. Product Dr. Dr. Product Dr. Product Dr. Serial number: Product Dr. Dr. Product	IOL-	CONF								Infe	o about IOL	-CONF	e PH	CENIX NTACT
Step File Parameter Port and/s AdJ. SE 10.4 Device 11:: 6918 d (176 d) Revision: Device is test: Device is test: 1088132 1087132 Port 3 Port 3 Port 3 Port 3 Port 3 Port 3 0.2 0.3 0 Port 3 Port 3 Port 3 Port 10-Link Vandor 10 Port mode Port mode ONLINE ONLINE Port 10-Link Vandor 10 Port 10-Link Vandor 10 Port 10-Link Vandor 10 Other 4 Port 10-Link Vandor 10 Vendor Vendor Port 10-Link Vandor 10 In the test of test		DEVICE CATALOGUE	< <		Device parameters			@ ^		<u></u>	8	¢3	⊜	?
-0.4 Port 14 Port 10-Link Davice 10 Image: Contract of the contrac	Setup Cockpit	File 1088132 -01: 2702983 -02 -03	All Parameter Port 1 Port 2 Port 3	Product I Vendor: Parameter	D: AXL SE IOL4 Phoenix Contact Value	Device ID: Serial number: Unit	6918 d (176 d) : Min	Ri Di Max	evision: escription:	IO-Link Master	Descriptio	De n	vice sta	ite:
		-04 OHLINE Devices OFFLINE Vendor	Port 4	Port1 IIO-Link. Device ID Port1 IIO-Link. Vendor ID Port1 IIO-Link. Validation / DataStorage Port1 IIO-Link. Cycle time Port1 IIO-Link. Cycle time Port1 IIO-Link diagnostics Port1 IIO-Link device substitute value Port1 IIO-Link device substitute value Port1 IIO-Link device substitute value Port1 Port2 unsbitute Port2 mode Port3 mode Port4 mode	IO-Link No check and clear No check and clear As fast as possible Enabled Enabled Set input value to zero value DI DI DI DI DI	• • • •	0	16777215 65535	Port mode IO-Link D. IO-Link Va IO-Link Va IO-Link Va IO-Link de Output pro- Input subs data Port mode Port mode	wice ID to validate andor ID to validat lidation / Data Sto cle time gnore Lock to the spectral gnore IC-Link dev vice substitute value ces data titute value behavi	; age port state ice diagnos je behavior or (PDIN) is	tics r (PDOUT) n case of i	in case	of invalid -Link

Figure 6-5 Parameter record of the IO-Link master including IO-Link devices

- In the device catalog, select a device under "FILE".
- Click "Write to device".

A list of corresponding devices appears.

• Select the device to which the parameters are to be written.

With just a click, you can write identical parameter records **to multiple identical devices**. This function is only available for IO-Link devices.

- In the device catalog, select the desired device under "ONLINE".
- Click the "Write to multiple selected devices" icon.
- Here, select the devices that are to receive identical parameters.

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IOL: IO-Link	-CONF « Configuration													Info	about IOL	-CONF	28	CENIX NTACT
	DEVICE CATALOGUE Fast access	Q	<			Device parameters					⊗ ↑	©	S		H	•	₿	?
Setup	ONLINE Devices OFFLINE Vendor Phone in Content CmbH	+	All Identification Parameter	Vendor:	ID:	AXL E IOL TC4/K M12 Phoenix Contact GmbH & Co. KG	Device Serial	e ID: number:	69131 d (176 d)		Rev Des	sion: cription:	Axioline K)	E IO-Lir	ik/analog (D	evice sta with 4 ar	ate: nalog TC inj
Cockpit	AXL SE AXL SE AXL SE IOL4 (1088132) -01: AXLE IOL TC4/K		System commands Resolution (0x0263) Unit (0x0264) Path calibration function: offset	Parameter Application Specific Tag Standard Command		Value *** Device Reset		Unit	Min 0	Max 32		Applicatio	Dese n Specific	cription Tag				Î
	M12 -02 -03 -04	111	(0x266) Path calibration function: reference (0x267) Comparison of reference junctions Cold iunction temperature	Resolution. TC1 Resolution. TC2 Resolution. TC3 Resolution. TC4	 	Codori r alcory solarge [0.1 0.01 0.01	* * *					Resolutio Resolution Resolution Resolution	in I					
			(0x0268) Comparison of reference junctions: offset (0x0269) Comparison of reference junctions: reference (0x026A)	Unit. TC1 TC4 Path calibration function: offset. TC1 Path calibration function: offset. TC2	•	°F	1 0 200		-32768 -32768	32767 32767		Unit Path calib Path calib	ration func	tion: offs- tion: offs-	et et			
				Path calibration function: offset. TC3 Path calibration function: offset. TC4	• []	30	000		-32768 -32768	32767 32767		Path calib Path calib	ration func	tion: offs tion: offs	et et			
			Davies escamptors	Path calibration function: reference. TC1 Path calibration function: reference. TC2	[0		-2147483648 -2147483648	21474836 21474836	47 47	Path calib Path calib	ration func	tion: refe tion: refe	rence			

Figure 6-6 Writing to multiple devices

6.2.2 Assigning parameters directly to an IO-Link master or IO-Link device

When a station is connected to IO-Link masters or IO-Link devices that match the file contents and you have selected an IO-Link master or IO-Link device under "ONLINE", the parameters of the connected device displayed in the IOL-CONF interface are updated when the Irp file is loaded.

- Under "ONLINE", click the IO-Link master or IO-Link device of which the parameters are to be directly overwritten with the parameters from the Irp file.
- Click the "Load parameters from a file" icon.
- Select the file containing the parameter record that belongs to your IO-Link master or IO-Link device.
- Click "Open".
- Click the "Write to device" icon to update the parameters in the IO-Link master or IO-Link device.

In the case of the parameter file of an IO-Link master, the parameters of the connected IO-Link devices will also be loaded. To write them to the devices, it is not enough to simply write to the IO-Link master.

- Select the IO-Link devices individually.
- Click the "Write to device" icon.

7 Updating the device description file (IODD) and device catalog

The following functions in the IOL-CONF software enable you to easily keep the IODDs and device catalog up-to-date.

- Import IODD files from the local storage location or from the online database (IODD finder portal)
- Delete selected IODD files from the device catalog
- Search for updates to already installed IODD files

7.1 Importing device description files

There are two ways to import an IODD:

ONLINE via the IODD finder portal

When your PC is connected to the Internet, the IOL-CONF software establishes contact with the IODD finder portal. There you can search for and download the necessary IODDs. They are automatically installed in the software.

• To do this, click the "Search for updates" button.

Device descriptio	n files (IODD): download and install	Action description files (JODDs)
Vendor	ifm electronic gmbh 🗸	device description titles (IODDs)
Vendor	Device	Available version
ifm electronic gmbh	AL2205_Acyclic (AL2205), AL2605_Acyclic (AL2605)	1.0.0.43
ifm electronic gmbh	AL2205_Cyclic (AL2205), AL2605_Cyclic (AL2605)	1.0.0.43
ifm electronic gmbh	AL2221, AL2225, AL2321, AL2325	1.0.0.43
ifm electronic gmbh	AL2230, AL2330	1.3.35.601927
🔽 ifm electronic gmbh	AL2231, AL2331	1.3.42.0
ifm electronic gmbh	AL2240, AL2340	1.3.42.0
ifm electronic gmbh	AL2241, AL2341	1.3,42,0
ifm electronic gmbh	AL2400	1.2.13.6
ifm electronic gmbh	AL2401	1.2.13.6
ifm electronic gmbh	AL2410	1.3.14.3
ifm electronic gmbh	AL2411	1.3.14.3
ifm electronic gmbh	DF2100	1.0.19
ifm electronic gmbh	DF2101	1.0.21
ifm electronic gmbh	DI5024, DI5026, DI523A, DI524A	1.3.14.12
ifm electronic gmbh	DI5027, DI5028, DI5029, DI5030	1.3.14.10
ifm electronic gmbh	D15031, D15032	1.3.14.6
ifm electronic gmbh	DI5033, DI5034	1.3.14.6
ifm electronic gmbh	DP1213	1.3.51.690993
ifm electronic gmbh	DP1222	1.3.51.717698
ifm electronic gmbh	DP1223	1.3.51.717698
ifm electronic gmbh	DP2200	1.3,18.317020
ifm electronic gmbh	DTI410, DTI411, DTI420, DTI421, DTI424, DTI425, DTI430, DTI43	1.3,42,304035
ifm electronic gmbh	DV1500, DV1510, DV1520, DV1530	1.4
ifm electronic gmbh	DV1500 Status B (DV1500), DV1510 Status B (DV1510), DV1520 Sta	
ifm electronic gmbh	DV2120, DV2121	1.0
ifm electronic gmbh	DV2130	1.0
ifm electronic gmbh	DV2131	1.0
ifm electronic gmbh	DV2500, DV2510, DV2520, DV2530	1.4
ifm electronic gmbh	DV2500 Status B (DV2500), DV2510 Status B (DV2510), DV2520 Sta	
ifm electronic gmbh	DX2045, DX2055	1.0
ifm electronic gmbh	E30391_AB (E30391)	1.0.0.13
Ok	Cancel	Search

Figure 7-1 IODD loaded externally using the company "ifm" as an example

- Select the desired IO-Link device under "Vendor".
- For multiple IO-Link devices, select the corresponding check boxes.
- Click "OK" to load the IODD in the IOL-CONF software.

Manually from the local file system of your PC

You can search for the file on your computer and install it in IOL-CONF from there.

- To do this, click the "Search" button in the bottom right corner.
- Click "OK" to load the IODD in the IOL-CONF software.



When manually reading an IODD file from the local file system of your PC into the software, the file must be a complete zip file including language file, image, etc.

7.2 Removing IODD files from the device catalog

• Click the "Search for updates" icon.



Figure 7-2 "Search for updates" icon

The following window opens.

IOL-C		evice description files (I	ODD): download and install				ENIX
IO-Link C	onfigu		OUpdates	Remove device description	ption files (IODDs)		NTACT
					1		
•		Vendor	Devices	Device family	File name	Installed version	
—	Fast	ifm electronic gmbh	IF6028, IF6030, IG6083, IG608	I	ifm-0004B5-20200730-IODD1	V1.3.66.57618	\odot
*		ifm electronic gmbh	IQ2008, IQ2009	IQ	ifm-000452-20190201-IODD1	V1.3.14.2	- (-)
Setup	De	Phoenix Contact	AXL E IOL AI1 I M12 R (27002	AXL E IOL	Phoenix-AXL_E_IOL_AI1I_M12	V1.0	
		Phoenix Contact	AXL E IOL AI1 I M12 S (27003	AXL E IOL	Phoenix-AXL_E_IOL_AI1I_M12	V1.0	с -
		Phoenix Contact 2	AXL E IOL AI1 U M12 R (27002	AXL E IOL	Phoenix-AXL_E_IOL_AI1U_M12	V1.0	
ヒ∠ → I	Ve	Phoenix Contact	AXL E IOL AI1 U M12 S (27003	AXL E IOL	Phoenix-AXL_E_IOL_AI1U_M12	V1.0	
	E	Phoenix Contact	AXL E IOL AO1 I M12 R (27002	AXL E IOL	Phoenix-AXL_E_IOL_AO1I_M1	V1.0	
Cockpit	E	Phoenix Contact	AXL E IOL AO1 I M12 S (27003	AXL E IOL	Phoenix-AXL_E_IOL_AO1I_M1	V1.0	
		Phoenix Contact	AXL E IOL AO1 U M12 R (2700	AXL E IOL	Phoenix-AXL_E_IOL_AO1U_M1	V1.0	
	E	Phoenix Contact	AXL E IOL AO1 U M12 S (2700	AXL E IOL	Phoenix-AXL_E_IOL_AO1U_M1	V1.0	
	E	Phoenix Contact	AXL E IOL DI16 M12 6P (27026	AXL E	PHOENIX_CONTACT-AXL_E_IO	V1.01	
		Phoenix Contact	AXL E IOL DI8 M12 6P (270265	AXL E	PHOENIX_CONTACT-AXL_E_IO	V1.01	
	E	Phoenix Contact	AXL E IOL DO8 M12 6P (27026	AXL E	PHOENIX_CONTACT-AXL_E_IO	V1.01	
		Phoenix Contact	AXL E IOL RTD1 I M12 R (2700	AXL E IOL	Phoenix-AXL_E_IOL_RTD1_M1	V1.0	
	E	Phoenix Contact	AXL E IOL RTD1 I M12 S (2700	AXL E IOL	Phoenix-AXL_E_IOL_RTD1_M1	V1.0	
		Phoenix Contact	AXL E IOL TC4/K M12 (2702983)	AXL E	PHOENIX_CONTACT-AXL_E_IO	V1.0	
	E	Phoenix Contact	CBMC E4 24DC/1-10A IOL (291	Electronic Circuit Breaker	PHOENIX_CONTACT-CBMC_E4	V1.0	
	E	Phoenix Contact	CBMC E4 24DC/1-4A+ IOL (29	Electronic Circuit Breaker	PHOENIX_CONTACT-CBMC_E4	V1.0	
	E	Phoenix Contact	ELR H3-IES-PT/500AC-3-IOL (2	ELR 5IN1 IOL	Phoenix-ELR_H3_IES_PT_500A	V1.2	
	E	Phoenix Contact	ELR H3-IES-PT/500AC-9-IOL (2	ELR 5IN1 IOL	Phoenix-ELR_H3_IES_PT_500A	V1.2	
	4						•
		Remove	Cancel				

Figure 7-3

3 Removing IODD files

- Select "Remove device description files (IODDs), (1)"
- Select the IODDs that are to be deleted (2).
- Click "Remove".
- Confirm safety prompt that checks whether you really want to delete the selected IODDs.
- The window containing information about updating the device definitions (IODDs) appears.

7.3 Searching for updates for already installed IODD files

On the PC with the IOL-CONF software, the software must have access to the IODD finder portal online via port 443.

• Click the "Search for updates" icon.

The "Download and installation of device definitions (IODD)" window opens. A preliminary check is performed to determine whether new versions exist of already installed IODDs. The "Updates" option is selected.

8 Reading and writing process data using the cockpit



All process data available online in an IO-Link device is visualized in this view.

• You have the option to set outputs.

Figure 8-1 Cockpit: AXL E IOLTC4/K box



Figure 8-2 "View" area in the IOL-CONF interface

To use the cockpit, proceed as follows:

- Select "Cockpit" in the "View" area.
- Select an IO-Link device in the device catalog.

Reading process data

The software displays the process data as defined in the IODD, i.e., as a binary value, numerical value or tachometer display.

You also have the option of tracking the chronological trend of the data in a chart display.

Writing process data

If an IO-Link device has outputs, you can change them. Process data outputs only become active once you click the $\mbox{I/O}$ button.

Setting process data outputs

The process data outputs are set in the cockpit. You can show or hide the window for the process data outputs via the "Process data" icon in the Cockpit tool bar.



Figure 8-3

Cockpit tool bar: process data

The following operating elements are available to change the outputs:

- Switch
- Input field
- Slider
- List

The available setting options and the operating elements depend on the connected IO-Link device and the configured operating mode. If the operating mode can be adjusted, it can be changed in the "Parameterization" menu.

Cockpit tool bar



Figure 8-4 Cockpit tool bar

1	Display instruments	Simplified graphical representation of the inputs and outputs
2	Events	This version of the IOL-CONF software does not support the display of events.
3	Process data output	State/values of the process data outputs are displayed. Outputs can be set.
4	Sampling rate setting	Specification of the sampling rate for new measured values (number of measured values per time unit)
5	Export measured values	The measured values of the chart are saved as a csy file
6	Chart	The measured values and switching states are visualized in a specified time period. The key indicates which measured value the characteristic curve relates to.
6 7	Chart Edit/settings	The measured values and switching states are visualized in a specified time period. The key indicates which measured value the characteristic curve relates to. Edit the chart markings, specify the time range of the X-axis, show/hide the key.



Note about exporting measured values:

Process data can be recorded via the cockpit for a maximum of 60 min. However, the possible recording duration can vary and depends on the set time range of the X-axis (default value: 10 min). IOL-CONF will only ever record the measured values of the device that is selected in the cockpit. As soon as a device is selected in the cockpit that supplies process values, IOL-CONF starts recording the measured values. Selecting a different device interrupts the recording of measured values for this device. If the device for which the recording was originally started is selected again, recording continues after this gap. This gap also exists in the measured values in the exported CSV file. IOL-CONF only exports the recorded measured values of the device selected at the time of export.

Display type	Description	Icon
Pointer instru- ment	Form of display typically used for pressure measurements in bar/psi/MPa, etc.	Pressure
	Based on measuring devices with manometer design.	bar -1.00 1.52 10.50
Bar graph	Form of display for process values that are not typically represented as a manometer or thermometer.	25.0 0.0 16,4
Thermometer	Form of display typically used for temperature measurements in °C/°F, etc. Based on measuring devices with thermometer design.	Temperature
Switching state	Form of display for digital I/O sig- nals Only one display format is shown. • "ON" display = active/ "high" output or • "OEE" display = inactive/	Switching [OUT1] Switching [OUT2] status
	"low" output	activ inactiv

The table below shows the icons used for measuring points/data sources

9 Troubleshooting

The table below lists frequently asked questions and their solutions

Question	Solution
Software does not start.	Reboot the computer
Sensor is not recognized. Error message "No connected device found"	Check network connection Check network settings Check IP address Assign static IP address Check firewall settings Disable firewall
Unable to complete installation routine	A device may not have been detected correctly or an incorrect driver was selected.
	Terminate installation Start uninstallation Reboot the computer Start the installation process again
Web browser display is not optimal.	Restart web browser and IOL-CONF
	Use an alternative browser (3.1.2 PC software)
	Display errors do not affect function.
After starting IOL-CONF, this message appears: "No license for this software found on the computer."	If the 30-day trial license has expired, you need to purchase a license ticket and install it using the "Activation Wizard".
	Restart web browser and IOL-CONF
	If you have saved your license on the ESL STICK USB A software dongle, make sure that the dongle can be accessed (plugged into the USB port).
Message: Performing background search for new device definitions (IODDs).	Repeat "Search for updates"

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