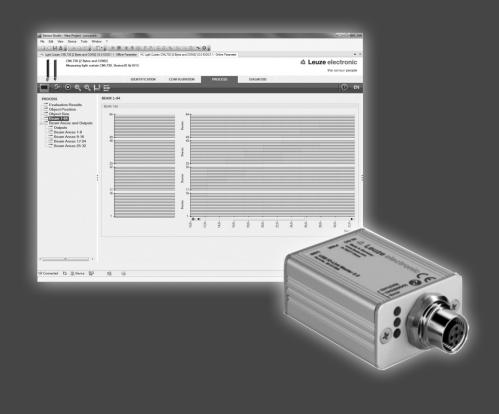
# Leuze electronic

the sensor people



# Sensor Studio

IO-Link USB-Master 2.0



**Original Operating Instructions** 

## ▲ Leuze electronic

#### © 2017

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## ▲ Leuze electronic

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#### 1 General Information

#### 1.1 Sensor Studio and IO-Link USB-Master

The Sensor Studio von Leuze electronic together with an IO-Link USB-Master is used to operate, configure and diagnose sensors and actuators (IO-Link devices) with an IO-Link interface.

The set at hand consists of several components. Delivery contents:

- IO-Link USB-Master V2.0
- International plug-in power supply unit
- High-Speed USB 2.0 cable, USB-A to Mini-USB
- Installation CD with software and drivers
- Brief manual

Every IO-Link device is described in its associated IODD file (IO-Link Device Description. After reading this IODD file into the software, the IO-Link device connected to the IO-Link USB-Master can be conveniently operated, configured and checked in several languages. If no device is connected, it can still be configured offline.

Configurations can be saved and opened as projects, thus allowing them to be transmitted to the IO-Link device at a later point in time.

#### 2 Software and Hardware Installation

#### 2.1 Software Installation

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To install the Leuze electronic Sensor Studios, you will need the installation CD-ROM included in the delivery contents.

As an alternative, you can choose the article **SET MD12-US2-IL1.1 (50121098)** on www.leuze.com. Please download and unzip the ZIP archive **Software** to your local PC.

Apart from that, you need to have **administrator** rights on the computer on which the software is to be installed.

#### 

✤ Do not connect the IO-Link USB-Master to your computer yet.

✤ Install the software first!

#### 2.1.1 Leuze electronic Sensor Studio

Insert the installation CD in the CD/DVD drive on your computer. Execute the **SensorStudioSetup.exe** file located in the **\01\_SensorStudio\_Vx.x.x** directory.

Please, follow the instructions on the screen.

#### 2.1.2 IO-Link USB-Master

#### 2.1.2.1 Driver Installation

That followed, execute the IOLinkUSBMaster20\_Setup.exe file located in the directory \02\_IOLink\02a\_IOLinkUSBMaster20\_Vx.x.x.

Please, follow the instructions on the screen.

#### 2.1.2.2 Connecting the IO-Link USB-Master 2.0 to the PC

After successfully installing, connect the USB IO-Link Master to your computer using the USB cable included in the delivery contents.

After connecting the IO-Link USB-Master to the computer, the **Found New Hardware Wizard** starts to install the USB driver for the new device. The IO-Link USB-Master 2.0 is now ready for use.

#### 2.1.2.3 Connecting an IO-Link Device

IO-Link devices (sensors/actuators) are connected to the IO-Link USB-Master at the M12 socket **IO-Link** via 3-, 4- or 5-pin cord sets with A-coded, M12 plug and socket.

#### 

Ο

When connecting IO-Link devices with a current consumption of more than approx. 40 mA at +24 V DC, it is important to connect the plug-in power supply unit to the IO-Link USB-Master! This is also applicable for switch-on/starting currents where appropriate.

#### 2.1.3 IO-Link Device DTM (User Interface + IODDs)

That followed, execute the IOLinkDTM\_Setup.exe file located in the \02\_IOLink\02b\_IOLinkDTM\_Vx.x.x directory.

Please, follow the instructions on the screen.

#### 3 First Steps

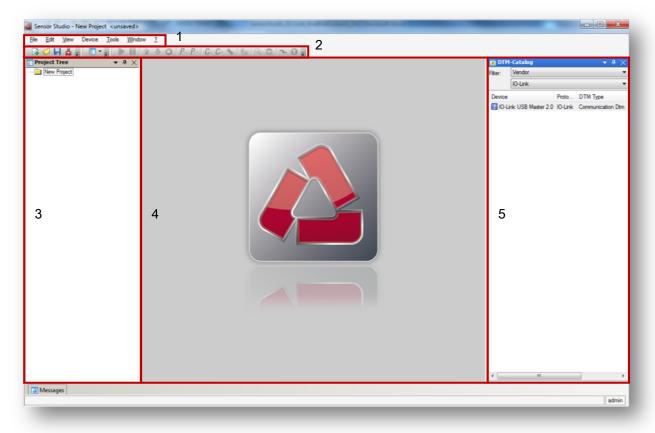
#### 3.1 Starting the Sensor Studio

To start the Leuze electronic Sensor Studio, double-click on the program icon on the desktop



or click on All Programs in the start menu and then on the Leuze electronic -> Sensor Studio.

#### 3.2 Program Interface

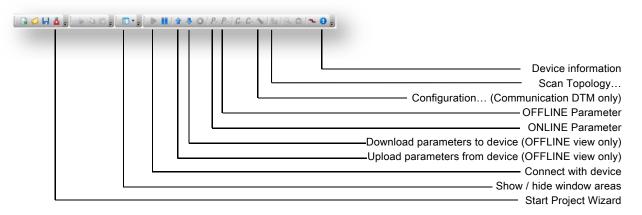


- 1. Menu Bar
- 2. Toolbar
- 3. Window area "Project Topology"
- 4. Window area "Device Data"
- 5. Window area "Device Catalog"

In the window area **Project Topology**, the configured devices are shown. In the first level of the topology the communication interface is shown; in the second level the sensor, which is connected to the interface follows.

In the window area **DTM-Catalog** all devices are listed, their communication DTM or Device DTM is installed. These can be filtered by manufacturer or communication interface.

#### 3.3 The Toolbar



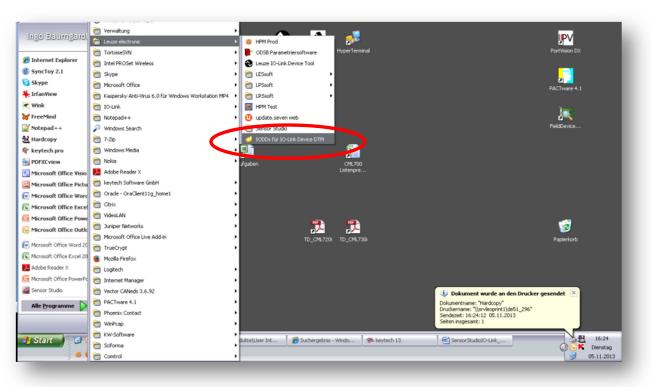
#### 3.4 Import Device Description (DTMs + IODDs)

Device specific DTMs are always installed using a setup program referencing the DTM in the Windows registry. Therefore, you can at any time uninstall these programs using the Windows Control Panel.

The setup of Leuze electronic IO-Link Device DTMs also contains the valid Leuze electronic IODDs and the necessary extensions for the operation with the Sensor Studio. For an update of the IODDs, simply run the setup of the current Leuze electronic IO-Link Device DTMs.

In order to manually add any IO-Link devices from Leuze electronic to the DTM-Catalog of the Sensor Studio, open the file directory containing the installed device descriptions IODDs:





Please make sure having the required IODD extensions at hand in addition to the device-specific IODDs. The IODD extensions control the graphical visualization of the IO-Link parameter and process data in the Sensor Studio.

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〕 Downloads		🌞 button	04.10.2011 09:03	IrfanView PNG File	1 KB	
🖳 Zuletzt besucht	=	DS_HRTR_46B_Teach_de_P	30.10.2013 15:54	Adobe Acrobat D	1.231 KB	
		DS_HRTR_46B_Teach_en_P	20.11.2013 13:34	Adobe Acrobat D	1.225 KB	
💻 Desktop		DS_HRTR46Bref_de_50117040_P	30.10.2013 15:56	Adobe Acrobat D	924 KB	
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📔 Bilder		🖉 iodd	04.10.2011 09:03	JScript-Skriptdatei	3 KB	
Dokumente		iodd_print	04.10.2011 09:03	Kaskadierendes St	3 KB	
🚽 Musik		iodd_screen	29.05.2012 16:38	Kaskadierendes St	5 KB	
🛃 Videos		Leuze_electronic-hrtr46b_384-20121121-IODD1.0.1	26.11.2012 08:41	XML-Dokument	37 KB	
admpc1823		leuze_electronic-hrtr46b_384-20121121-IODD1.0.1-de	26.11.2012 08:41	HTML-Dokument	70 KB	
鷆 Application Data		Line_electronic-httr46b_384-20121121-IODD1.0.1-ch	26.11.2012 08:41	HTML-Dokument	69 KB	
📔 Desktop		Ieuze_electronic-httr46b_384-20121121-IODD1.0.1Extensions	18.06 2014 11:17	XML-Dokument	26 KB	
Downloads		Leuze_electronic-hrtr46b_384-icon	07.11.2013 13:27	IrfanView ICO File	2 KB	
崖 Eigene Bilder		🌞 leuze_electronic-hrtr46b-icon	07.11.2013 13:38	IrfanView PNG File	5 KB	
Eigene Dokumente		🌟 leuze_electronic-hrtr46b-pic	07.11.2013 13:38	IrfanView PNG File	66 KB	
🔰 Eigene Musik		🌟 leuze_electronic-logo	04.10.2011 09:03	IrfanView PNG File	6 KB	
📴 Eigene Videos	-	🖳 ReadMe	16.11.2011 12:16	<b>Rich Text Format</b>	86 KB	

Please copy the file directory containing the IO-Link device description IODD and the corresponding extension file to **IODDs for IO-Link device DTM**:

🗀 C: Wokumente und Einstellungen \All Users \Anwendungsdaten \Leuze ek	ectronic\IO-Link Device DTM\IO 📃 📃	
Datei Bearbeiten Ansicht Eavoriten Extras ?		<b>1</b>
🕝 Zurück 👻 🕥 👻 🏂 🔎 Suchen 🎼 Ordner		
Adresse 🗁 C:\Dokumente und Einstellungen\All Users\Anwendungsdaten\Leuze electronic\IG	O-Link Device DTM\IO-Link DDs	~
Name A	Gr Typ Geändert am	
▶ Bildaufgaben       ♠         ▶ Bilder von Scanner oder Kamera       ♠         ↓ Bilder von Scanner oder Kamera       ♠         ↓ Bilder von Scanner oder Kamera       ♠         ↓ Als Diashow anzeigen       ♠         ♠       Abzüge online bestellen         ♠       Ausgewählte Bilder drucken         ♠       Auf CD kopieren	Dateiordner 05.11.2013 16:39 Dateiordner 05.11.2013 16:39 Dateiordner 04.11.2013 08:10 Dateiordner 24.10.2013 11:01 10 KB IrfanView ICO File 24.10.2012 11:01	
2 Objekt(e) ausgewählt	😏 Eigener Computer	

Having started the Leuze electronic Sensor Studio (see Chapter 3.1) please launch the device catalog management by selecting **Tools → DTM-Catalog Management...** 

<u>D</u> atei <u>B</u> earbeiten <u>A</u> nsicht	Serät Werkzeuge Eenster ?	
🕞 🥔 🖬 🍐 📕 🍬 🖓	🗈 🛃 Anneiden P. P. C. C. 💊 🕼 🔍 🛱 🦄	0.
Projektbaum 🔻 🕂 🗙	Abmelden	
Neues Projekt	Passwort ändern	
	(M. Benders day	
	Pfadeinstellungen	
	JTM-Katalogmanagement	
	an Onlinean	

Next, you may start the automatic search for new devices: 🗲 Searc	ch for installed DTMs
---	-----------------------

nown D	TMs:					Current DTM Catalog:	
Name	Vendor	Protocol	Туре	Version	Dati	Name	
						(I)GSU Serial Communication	
						(I)GSU Ultrasonic Forked Sensor	
						— OKANA COM 20 (2 Bytes and COM 2) IODD 1.0.1	=
						CML720 [2 Bytes and COM3] IODD1.0.1	
						CML720 [32 Bytes and COM2] IODD1.0.1	
						CML720 [32 Bytes and COM3] IODD1.0.1	
						CML720 [8 Bytes and COM2] IODD1.0.1	
						CML720 [8 Bytes and COM3] IODD1.0.1	
						CML730 [2 Bytes and COM2] IODD1.0.1	
						CML730 [2 Bytes and COM3] IODD1.0.1	
						CML730 [32 Bytes and COM2] IODD1.0.1	
						CML730 [32 Bytes and COM3] IODD1.0.1	
						CML730 [8 Bytes and COM2] IODD1.0.1	
						CML730 [8 Bytes and COM3] IODD1.0.1	
						OMU-LTC IODD1.1	
						OMU-LTV IODD1.1	
						WHRTR 468/L.221-S12 IODD1.0.1	
(					>	<	>

Please transfer the newly found devices to your local catalog and confirm with OK:

Bekannte DTMs:		Aktueller DTM-Katalog:	
Name	Herste	Name	<b>^</b>
Light Curtain CML720 [2 Bytes and COM2] V0.1.8 IODD1.0.1	Leuze (	I)GSU Serial Communication	
Light Curtain CML720 [2 Bytes and COM3] V0.1.8 IODD1.0.1	Leuze e	🦸 (I)GSU Ultrasonic Forked Sensor	
Light Curtain CML720 [32 Bytes and COM2] V0.1.8 IODD1.0.1	Leuze	CML720 [2 Bytes and COM2] IODD1.0.1	
Light Curtain CML720 [8 Bytes and COM2] V0.1.8 IODD1.0.1	Leuze	>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>	
Light Curtain CML720 [8 Bytes and COM3] V0.1.8 IODD1.0.1	Leuze (	CML720 [32 Bytes and COM2] IODD1.0.1	
		CML720 [32 Bytes and COM3] IODD1.0.1	
		CML720 [8 Bytes and COM2] IODD1.0.1	
		CML720 [8 Bytes and COM3] IODD1.0.1	
		CML730 [2 Bytes and COM2] IODD1.0.1	
		CML730 [2 Bytes and COM3] IODD1.0.1	
		CML730 [32 Bytes and COM2] IODD1.0.1	
		CML730 [32 Bytes and COM3] IODD1.0.1	
		CML730 [8 Bytes and COM2] IODD1.0.1	
		CML730 [8 Bytes and COM3] IODD1.0.1	
		OMU-LTC IODD1.1	
		OMU-LTV IODD1.1	
		HRTR 468/L.221-S12 IODD1.0.1	
< III	>		>

Now, you can create a new Sensor Studio project to configure the newly installed devices (see Chapter 4).

#### 3.5 Exit the Sensor Studio

When finished, the Sensor Studio can be closed by the command Exit in the File menu.

The last configuration can now be stored to the computer and can then be opened with the **Project Wizard** or by the command **Open** in the menu **File** again.

## 4 Device Configuration

#### 4.1 Setting up a project

In the **File** menu select the **New** menu item to set up a new project. The topology of the **Project Tree** is empty without any selected devices.

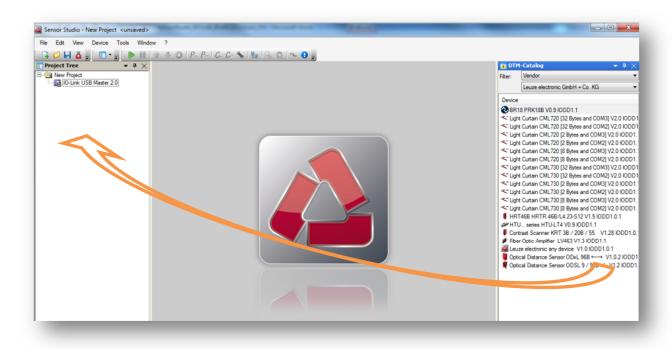
#### 4.2 Set up a topology

#### 4.2.1 Select a device from the DTM-Catalog

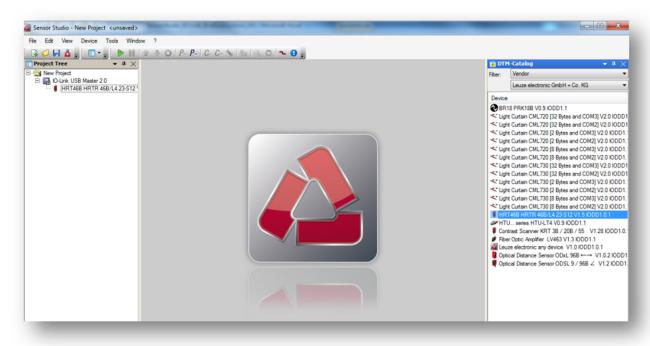
Ele Edt Vew Device Icols Window 2	
Be Est Yew Device Tools Window 2	Image: The state of the sta

Select the IO-Link Master 2.0 USB as the communication interface out of the DTM-Catalog and connect it per Drag&Drop to the Project Tree. Preset the filter to Manufacturer and then **IO-Link**.

Sensor Studio - New Project Cunsaved>	ow ?   ☆ ふ ③   P. P.   C. C. ▲   🍇   ۹. ☎   ╼ 🛛 🕫	Fiter.	1-Catalog Vendor	- C - X - X - X - X - X - X - X - X - X
			,	DTM Type Communication Dim

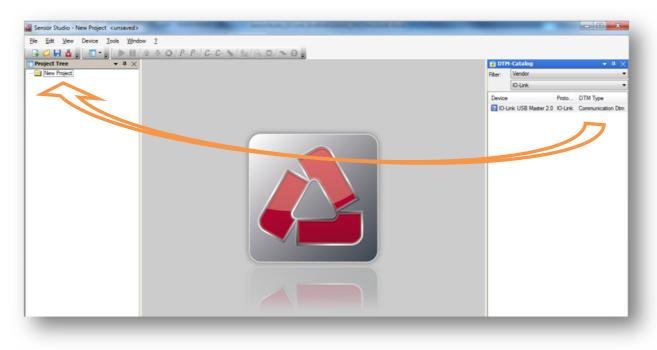


Then select the sensor you want to run on the IO-Link USB Master. Preset the filter of the DTM-Catalog to **Manufacturer** and then **Leuze electronic GmbH + Co. KG**.



Next, you may start the communication with the device. To do so, please follow the description of Chapter 4.4.

#### 4.2.2 Select a device by IO-Link topology scan



Select the IO-Link Master 2.0 USB as the communication interface out of the DTM-Catalog and connect it per Drag&Drop to the Project Tree. Preset the filter to **Manufacturer** and then **IO-Link**.

Sensor Studio - New Project < unsaved> File Edt Vew Device Tools Window ? G G G G G G G G G G G G G G G G G G G	₩1Q.Q1~0,		1-Catalog	- • • • ×
E- C New Project		Fiter:	Vendor	• + ×
- Co-Unik USB Master 2.0			IO-Link	•
		Device	Proto ink USB Master 2.0 IO-Li	DTM Type

Click with the right mouse button on the entry IO-Link USB master 2.0 in the Project Tree. From the context menu, select the function Scan Topology... → Channel\_Id\_IO link.

Tree 🗸	· ×		$\sim$	्रे 🛰 🛛 🕫		T DTI	M-Catalog		- ÷ ;
Project						Filter:	Vendor		
Add							IO-Link		
Delete						Device		Proto (	
Cut						E 10-	Link USB Master 2	2.0 10-Link (	Communication Dt
Сору									
Paste			1						
Rename									
Show/Hide Channels	-								
Connect									
Connect All									
Disconnect									
Parameters	-								
Offline Compare									
Online Compare									
Online Compare All									
Configuration									
Scan Topology	+ Cł	hannel_Id_IOLink							
Observe			-						
Diagnosis									
Import / Export									
Info									
Functions									

Alternatively, start the topology scan wizard from the toolbar. To do this, click the button Scan Topology ...

opology Scan Wizard	(DT
Providing support for the topolo	gy scan (FDT version 1.2.1).
	A backup of the current project will be created. Please click "Continue" to start the scan. You may abort the current scan process by clicking "Cancel" at any time.
	Continue Finish Cancel

Start the topology scan with the button **Continue**.

Providing support for the topology scan (	FDT version 1.2.1).		
B-IO-Link USB Master 2.0 ⊡-Channel_Id_IOLink └- 384	Please choose one of the compatible Dtms shown in the view.  Select <u>a</u> utomatically (First in list)  Select <u>manually</u>		
	Name	Support Level	
	HRT46B HRTF	3 46B/ Specific	
	Continu	e Finish Cancel	

Confirm the scanned device to be integrated in your project topology. Click to the button **Continue**.

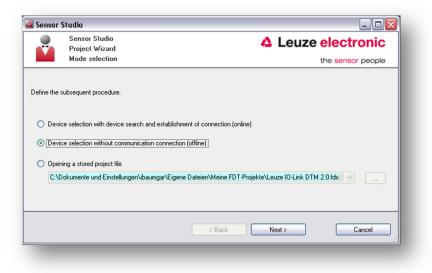
opology Scan Wizard	577 · · · · · · · ·
Providing support for the topology sca	an (FDT version 1.2.1).
	The scan has finished. To keep the results click "Finish". To restore the project click "Cancel".
	Continue Finish Cancel

Confirm the final confirmation prompt, click to the button **Finish**. The Topology Scan Wizard now integrates the sensor selected in the project tree.

Next, you may start the communication with the device. To do so, please follow the description of Chapter 4.4.

#### 4.3 Select IO-Link Device with the Project Wizard

Prior to the main software, the Project Wizard helps you to establish the communication with the connected device:



Alternatively, you may start the Project Wizard by clicking on the button Project Wizard in the toolbar:



By clicking on the **Next >** button, a list containing all installed Leuze electronic IO-Link device descriptions (IODD) will be shown:

	Sensor Stu Project Wi			Leuze electron	nic
	Device se	lection		the sensor pe	ople
ct a de	vice from the lis	t.			
		Device	Version	Manufacturer	^
	CML 720	Light Curtain CML720 [32 Bytes and COM3] V1.5	V1.5	Leuze electronic GmbH + Co. KG	
	CML 730	Light Curtain CML730 [32 Bytes and COM3] V1.5	V1.5	Leuze electronic GmbH + Co. KG	
	CML 730	Light Curtain CML730 [32 Bytes and COM2] V1.5	V1.5	Leuze electronic GmbH + Co. KG	-
	CML 730	Light Curtain CML730 [2 Bytes and COM3] V1.5	V1.5	Leuze electronic GmbH + Co. KG	
	CML 730	Light Curtain CML730 [2 Bytes and COM2] V1.5	V1.5	Leuze electronic GmbH + Co. KG	
	CML 730	Light Curtain CML730 [8 Bytes and COM3] V1.5	V1.5	Leuze electronic GmbH + Co. KG	_
	CML 730	Light Curtain CML730 [8 Bytes and COM2] V1.5	V1.5	Leuze electronic GmbH + Co. KG	~
	-		-		
			< Back	Next > Canc	

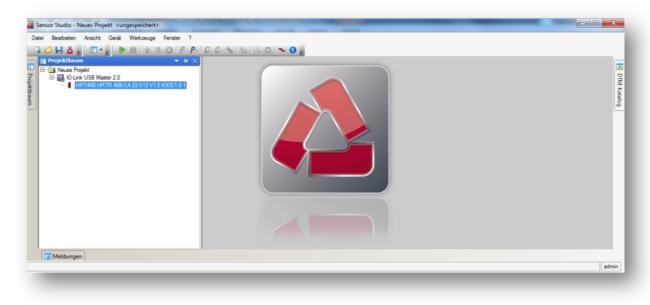
Select the reference of the connected IO-Link device. By clicking on the **Next >** button, the Sensor Studio will start with the OFFLINE view of the selected device

Next, you may start the communication with the device. To do so, please follow the description of Chapter 4.4.

#### 4.4 Connect with Device

Before you may change any configuration parameter of the device, or read any process data from the device, an online connection needs to be established.

Please select the device entry in the **Project Tree** with the left mouse button:



Next, you may start the communication by clicking on the button Connect with Device:

<u>Eile E</u> dit ⊻iew Device <u>I</u> o	uols <u>W</u> indow ?	
🧭 🖬 🤷 🖕 🤄 🖓 🖄	, <b>□</b> , <b>▶</b> #   ☆ ◇ ○   ₽ 𝔅   & & ≤   ₺   ♀ ☆   <b>↓</b>   ♀ ☆   <b>↓</b>   ♀	
***	Connect with device	Leuze electronic
		the sensor people
		the sensor people

Now, you can configure the connected device. Please follow the descriptions in Chapter 5.

#### 5 Device Configuration

The configuration of IO-Link sensors in the Sensor Studio can be done in two ways:

#### **ONLINE-Configuration**

During the ONLINE-Configuration, the data displayed in the Sensor Studio are the current device settings. Changes will be immediately effective in the device (see chapter 5.1).

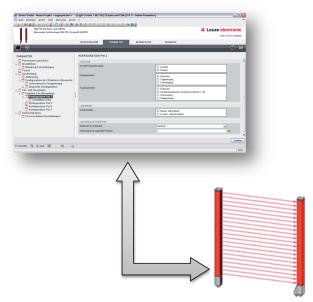
#### **OFFLINE-Configuration**

In the OFFLINE-Configuration, the individual parameters are kept in an instance dataset on the PC. Changes are initially effective only in this instance dataset.

In order to transfer the changes to the device a parameter download must explicitly be performed (see chapter 5.2).

The instance dataset can be stored on the PC or can be reloaded from the PC using the OFFLINE view (see chapter 5.2.1).

#### 5.1 ONLINE-Configuration



Select the **ONLINE configuration** if you want to test individual device functions. In this mode, changes are transferred and enabled immediately into the device.

By clicking on the button **Online Parameter**, the online view is started:

File Edit View Device Tools Window		×
i 🕞 💋 🖬 🛔 🖕 🗇 🖄 🗂 🖕 🗈 •	j 🕨 👔 😭 🖉 🗿 🥐 P - I C - C - 🦠 💿 🔍 🌣 I 🛰 🕒 🖕	
	Online Parameter	Leuze electronic
		the sensor people
_		

The IO-Link USB-Master is now synchronizing all parameters with the data of the connected device.

The register **IDENFIKATION** displays all relevant device characteristics and links to the technical documentation:

Image: Construction of the second				meter	-
HRTR 46B/L4.23-S Diffuse Reflection	512 Light Scanner With Back	ground Suppression			Leuze electronic
		IDENTIFICATION	CONFIGURATION	PROCESS	
<b>_</b>					0 - E
IDENTIFICATION	DEVICE INFOR	MATION			
Device Information	VENDOR INFOR	MATION			
	Vendor Name			Leuze electronic GmbH	+ Co. KG
Datasheet	Neet Vendor Text		www.leuze.com		
	DEVICE INFORM	IATION			
	Product Name			HRTR 46B/L4.23-S12	
	Product ID			50114037	
	Product Text		Diffuse Reflection Light	Scanner With Background Suppression	
	COMPONENT IN	FORMATION			
	Serial Number			1110B000382	
	Firmware Version			01.15	
	Hardware Version			В	

The register **CONFIGURATION** displays the actual device configuration:

	③   P P   C C S.   Ba   Q. ☎   Se ] .	0.1 - Online Parameter	- :
HRTR 468/L4.23-S12	anner With Background Suppression		the sensor people
- 💗	IDENTIFICATION CONFIG	URATION PROCESS	
<b>-</b>			2 EN
CONFIGURATION	SWITCHING POINTS		
Switching Points	SWITCHING POINT 1		
Outputs	Scanning Range	120	mm
Factory setting	Reserve	3	2,
	Teach Mode	Teach on Background	
		Teach on Object	
	System Command	Teach Scanning Range 1	
	SWITCHING POINT 2		
	Scanning Range	275	mm
	Reserve	10	2
	Teach Mode	<ul> <li>Teach on Background</li> <li>Teach on Object</li> </ul>	
	System Command	Teach Scanning Range 2	
	STORE PERMANANT		
	System Command	Store Scanning Ranges permanently	
			Close

Several views allow changing individual parameters. Changes will become effective immediately in the device.

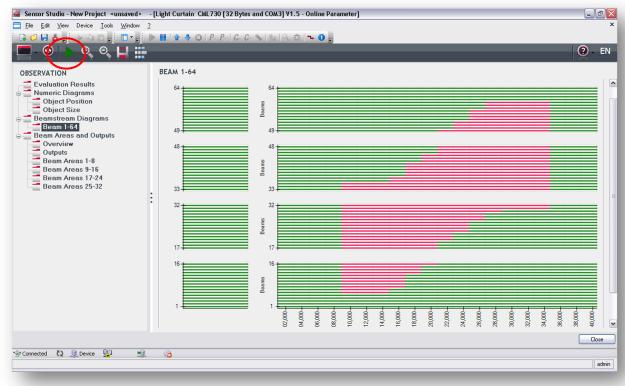
To reload / update the configuration from the sensor, please click on the **UPLOAD** button in the DTM toolbar, only:

e Edit View Device Tools Wind			
) 🥥 🖬 🛓 🖉 🗖 • 📕 🕨 🛍	🛊 😽 🔘   P P   C C 💊   🗞   🔍 🏩   🛰 🚺	Ŧ	
HRT46B HRTR 468/L4.23-S12 V1.5	IODD1.0.1 - Offline Parameter     HRT46B HRTR 46B/L4.23-S12 V	1.5 IODD1.0.1 - Online Parameter	•
HRTR 46B/L4.23 Diffuse Reflection	3-S12 n Light Scanner With Background Suppression		Leuze electronic
			the sensor people
	IDENTIFICATION	CONFIGURATION PROCESS	
			😨 - EN
			×
CONFIGUE Upload the device data	iset from the device to refresh the shown values		
Switching Points	set from the device to refresh the shown values SWITCHING POINT 1		
Switching Points Outputs		127	m
Switching Points	SWITCHING POINT 1	127	mn X
Switching Points Outputs Lock Button	SWITCHING POINT 1 Scanning Range	127 3 ① Teach on Background ④ Teach on Object	mm

	0	
	$\Box$	NOTICE
Ŷ	The	e UPLOAD / DOWNLOAD buttons 💷 in the toolbar of the Sensor Studio are not effective in
	die (	ONLINE view of the IO-Link Device-DTM.

The register **OBSERVATION** offers different visualization of the measurement data of the device:





Please refer to the Sensor Studio online help and the information given in the graphical user interface itself for additional functionality of the software.

#### 5.2 OFFLINE-Configuration

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		Leuze electronic     the server people
	DONTRINATION KONFIGURATION	ne seco pope
		🔞 - DE
IDENTIFIKATION	IDENTIFICATION	RESCHREEUNG
Gerite-Konstaten	AWDIGERSPEZITIONE KENN2DOWUNG	
	Anwandungaspeatlache Makkenung	Bedienhinweise
Beckenhinweise Technische Beschreitung	HERSTELLER BYORMATON	Wichtig!
CML 7xx Gerite-IDs	Hestidenane Hestidenane	Arbeiten Sie nur in der Online-Ansicht, erkennbar an den ver Repstern
	GEAATE evidemation	
	Problementary	IDENTIFICATION PARAMETER BEOMAC
	Podule ID Geniterostate Definition	Verwenden Sie für Hoch- bzw. Herunterladen der Parameter keine
	Geritt nit 20 Dr./Augingen •	Befehle der Rahmensoftware oder des Konferdmendis im Ensiekthalen, Diesen
		wirken nur auf die Offline-Ansicht.
		Änderungen der Parameter werden direkt in den Lichtvortrang geschrieben.
		Bedienelemente der Online-
		Ansicht
		OK Deminen Abbeden
ୟୁ Nicht verbunden ଅ 👔 Extensitz	92 C	atrin
	11	

In the **OFFLINE-Configuration**, the individual parameters are kept in an instance dataset on the PC. Changes are initially effective only in this instance dataset.

The OFFLINE view shows only the registers IDENFICATION and CONFIGURATION. Cyclic process cannot be read from the device.

By clicking on the button Offline Parameter, the OFFLINE view is started:

a Sensor Studio - C.\Users\\baumgar\Documents\Meine FDT-Projekte\HRTR.468.fdx	- • · ×
Datei Bearbeiten Ansicht Gerät Werkzeuge Fenster 2 🕞 🕗 🕞 🤷 👳 🚺 🗣 🐘 👔 🗣 🖏 🖓 P. P. C. C. 🐦 🕼 🖉 🗢 🛛 🕫	
Coffine-Parameter	<b>a</b> 9

To edit the data of the connected device, you need to upload the actual configuration from the device first. To do this, click the button **Upload from the device** in the toolbar of the Sensor Studio:



The register **IDENTIFICATION** displays all relevant device characteristics and links to the technical documentation:

Sensor Studio - New Project <unsaved></unsaved>	harded by	a paratal and a second second	Card Sec.		
File Edit View Device Tools Window ?					
🔁 🕼 🖬 🛔 💼 📲 📄 🖬 🕋 🤜	• 🕥   P. P.   C. C. 🗞   🍇   🔍 🎘   🖚 🔒	÷			
HRT46B HRTR 46B/L4.23-S12 V1.5 IODD1.0.	1 - Offline Parameter 📕 HRT46B HRTR 46B/L4.23-S12	V1.5 IODD1.0.1 - Online Parame	eter	• × (	
HRTR 46B/L4.23-S12					
HRTR 468/L4.23-S12 Diffuse Reflection Light S	canner With Background Suppression			the sensor people	DTM-Catalog
	IDENTIFICATION	CONFIGURATION	PROCESS	l	ĕ
<b>—</b> •				0 - EN	
IDENTIFICATION	DEVICE INFORMATION				
Device Information	VENDOR INFORMATION				
– IO-Link – Tool Info	Vendor Name		Leuze electronic GmbH + Co. KG		
Datasheet	Vendor Text		www.leuze.com		
Int I K 40D/L4.23-3 IZ	DEVICE INFORMATION				
	Product Name		HRTR 46B/L4.23-S12		
	Product ID		50114037		
	Product Text		Diffuse Reflection Light Scanner With	Background Suppression	
•	COMPONENT INFORMATION			· · ·	
	Serial Number		1110B000382		
	Firmware Version		01.15		
	Hardware Version		В		

The register **CONFIGURATION** displays the actual device configuration:

Sensor Studio - New Project <unsaved></unsaved>		and the second s	
le Edit View Device Tools Window			
	♥ ②   P. P.   C. C. N   U   Q. ☆   *		
	0.1 - Offline Parameter HRT46B HRTR 46B/L4.23		• ×
HRTR 46B/L4.23-S12 Diffuse Reflection Light	Scanner With Background Suppression	🛆 Leuze	he sensor people
		t	he sensor people
<b>*</b>	IDENTIFICATION	CONFIGURATION PROCESS	
<b>—</b> •			2 EN
CONFIGURATION	SWITCHING POINTS		
Switching Points	SWITCHING POINT 1		A
Outputs Lock Button	Scanning Range	120	mm
Factory setting	Reserve	3	%
	Teach Mode	Teach on Background	
		Teach on Object	
	System Command	Teach Scanning Range 1	
	SWITCHING POINT 2		
	Scanning Range	275	mm E •
	Reserve	10	%
	Teach Mode	<ul> <li>Teach on Background</li> <li>Teach on Object</li> </ul>	
	System Command	Teach Scanning Range 2	
	STORE PERMANANT		
	System Command	Store Scanning Ranges permanently	

Several views allow changing individual parameters. Changes only become effective with a parameter download.

To do this, click the button **Download to the device** in the toolbar of the Sensor Studio:



#### 5.2.1 Save configuration to the PC

In the OFFLINE view, the instance dataset can be stored to the PC and loaded again from there. In this way, devices of the same type can be configured uniformly (duplicated).

To do this, proceed as follows:

Please upload the actual configuration from the device. To do this, click the button **Upload from the device** in the toolbar of the Sensor Studio:

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Next you can save the Sensor Studio project including all device settings to your PC. To do this, please select **Save as...** in the **File** menu:

🐴 s	ensor Studio - N	ew Project	<unsaved></unsaved>	and the second second	States of Street			
File	Edit View	Device Te	ools Window ?					
	New	Ctrl+N	🕨 🔠 🎓 🔻	3 P. P. C. C		• 🙂 👳		
	Open Save	Ctrl+O Ctrl+S	\$12 V1.5 IODD1.0.1	I - Offline Parameter 📕	HRT468 HRTR 468/L4.23-5	S12 V1.5 IODD1.0.1 - Online Paran	veter	• × 🗖
	Save As	Carto	B/L4.23-S12					
4	Project Wizard		eflection Light S	canner With Backgro	und Suppression			Leuze electronic the sensor people the sensor people
	Export Project							tal
1	Print	•			IDENTIFICATION	CONFIGURATION	PROCESS	ع
	Close							😨 EN
	Verify Project							
	Recent File List	•		SWITCHING POI	NTS			
	Ext							
	-	ing roma	ar in the second se	SWITCHING POINT	1			

Define a representative name of your project:

Organisieren 👻 Neuer Ordner			 •
a 🌗 ibaumgar	-	Name	Änder
Application Data		CML720i-20_default.fdx	19.03.
📜 Desktop		Neues Projekt.fdx	09.07.
🚺 Downloads		Nedes Projektitux	05.07.
Eigene Bilder			
4 🣗 Eigene Dokumente	E		
⊳ 퉲 _ToDo			
Branchen & Anwendungen			
🚝 keytech			
Leuze electronic			
🌗 Meine FDT-Projekte			
Produkte			
🛛 📗 Produktmanagement			
🛛 鷆 Projekte	-	•	Þ
Dateiname: HRTR 46B			•
Dateityp: Sensor Studio Project (*.fdx)	)		-

You can then close the project in Sensor Studio and, if desired, exit the program.

#### 5.2.2 Load Configuration from PC

In order to download a stored configuration to a sensor, please start the Sensor Studios and then open the project file corresponding to the connected device. To do this, please select **Open**... in the **File** menu.

Sensor Studio - C:\Users\ib	aumgar\Docu	uments\Meine FDT-Projekte\HRTR 46B.fdx		Subary R Street 1	
Datei Bearbeiten Ansicht Neu Offnen	Strg+N Strg+O	kzeuge Fenster ?	I 🔍 🔅 i 🛰 🙂 💡		
Speichem     Speichem unter     Projektassistent     Projekt exportieren     Drucken	Strg+S	DDD1.0.1 - Offline-Parameter S12 ster mit Hintergrundausblendung			Leuze electronic the sensor people
Schliessen Projekt überprüfen	•		IDENTIFIKATION	KONFIGURATION	? . DE
Zuletzt geöffnete Projekte Beenden	•	SCHALTPUNKTE			

Confirm the file selection:

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-			
🎍 adminleo \land	Name	Änderungsdatum	Тур
adminleo.L	CML720i-20_default.fdx	19.03.2014 10:24	FDX-Date
admpc1823	HRTR 46B.fdx	11.08.2014 18:26	FDX-Date
ibaumgar	Neues Projekt.fdx	09.07.2014 17:03	FDX-Date
Applicati			
📜 Desktop 😑			
Eigene Bi			
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🐌 Meine F			
퉬 Produk			
🃔 Produk 👻 🔞			
Datei <u>n</u> ar	me: HRTR 46B.fdx	- Sensor Studio Project (	*.fdx) 👻

Activate the sensor in the **Project Tree** with the left mouse button.

Sensor Studio - Neues Projekt <ungespeichert></ungespeichert>	
Datei Bearbeiten Ansicht Gerät Werkzeuge Fenster ?	
	Unit reading
3 Meldungen	admin

Next, you may start the communication by clicking on the button Connect with Device:

		Window 2	<u>_</u> Eile <u>E</u> dit ⊻iew Device <u>I</u> ools
	- C- 💊 🕲 🔍 🏝 🛰 🕒 🖕		🕞 🥥 🖬 🛓 🛔 🗣 🖓 🗅 📕
Leuze electronic		Connect with device	***
the sensor people			

By clicking on the button Offline Parameter, the OFFLINE view needs to be started...

Sensor Studio - C/Users\ibaumgar\Documents\Meine FDT-Projekte\HRTR 468.fdx	
Datei Bearbeten Arsicht Gerät Werkzeuge Fenster 2 C C → V - C → V - C → V - C → V - C - C → V - C → C - C → V - C - C → V - C → V - C → C - C → V - C → C → C → C → C → C → C → C → C → C	
Offline-Parameter	<b>1</b>

Then the configuration can be transferred to the device.

To do this, click the button **Download to the device** in the toolbar of the Sensor Studio:



	○ □ NOTICE
₿	Some sensors apply the configuration only in the volatile memory (RAM). To save the data permanently, an explicit SAVE command must be transmitted after downloading the parameters.
♦	Please follow the instructions of the technical description of the device.

## 6 Specifications IO-Link USB-Master

#### 6.1 USB connection

The USB connection serves as communication interface between the interface and the PC. The connection can be realized through the enclosed cable.

	Signal	Function
Pin 1	+5V	VBUS +5VDC/500mA
Pin 2	D-	Data -
Pin 3	D+	Data +
Pin 4	ID	not connected
Pin 5	GND	Ground

#### 6.2 IO-Link connection

M12 connector, A-coded: Interface to a sensor / actor with IO-Link.

	Signal	Function	
Pin 1	+24V	+24V 1.0 A / 80mA	
Pin 2	SIO	SIO -	+24VDC $(1(0,0)3)$ GND
Pin 3	GND	0V	$\langle \rangle \circ \rangle$
Pin 4	IO-Link	IO-Link	NC 4 IO-Link
Pin 5		NC	

#### 6.3 LED display

The light emitting diodes on the USB IO-Link Master have the following meaning:

Inscription	Color	Meaning
PWR	Yellow	Indicates Power from USB Port
CH1 (C/Q)	Green	IO-Link Mode
		The LED blinks slowly, if there is no IO-Link connection, blinks fast in pre-operate and flashes if the IO-Link connection is active (operate).
	Yellow	SIO Mode
CH1 (DI/DO)	Yellow	Indicates state of SIO mode
Error	Red	Flashes in case of errors (short circuit, errors in data transmission).

7	Types and Accessories				
	SET MD12-US2-IL1.1	50121098			
	Including	IO-Link USB-Master V2.0			
		International plug-in power supply unit			
		High-Speed USB 2.0 cable, USB-A to Mini-USB			
7.1	Adapter cable for HRTR 46B, ODSL 9, ODS(L) 96B:				
	K-DS M12A-M12A-4P-2m-PVC		50110126		
	Cord set:	M12, 4 pins, male			
		PVC cable, length 2,000 mm			
		M12, 4 pins, female			
	K-DS M12A-M12A-4P-5m-PVC		50110125		
	Cord set:	M12, 4 pins, male			
		PVC cable, length 5,000 mm			
		M12, 4 pins, female			
7.2	Adapter cable for KRT 3				
	K-DS M8A-M12A-4P-0,3m-PVC		50107276		
	Cord set:	M12, 4 pins, male			
		PVC cable, length 300 mm			
		M8, 4 pins, female			
7.3	Adapter cable for CML 700i:				
	K-DS M12A-8P-4P-2m	50120999			
	Cord set:	M12, 4 pins, male			
		PUR cable, length 2,000 mm			
		M12, 8 pins, female			
	K-DS M12A-8P-4P-5m	50121000			
	Cord set:	M12, 4 pins, male			
		PUR cable, length 5,000 mm			
		M12, 8 pins, female			