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Addition to the operating instructions:

Selecting the operating mode using an
IO-Link interface

Contents

1 Preliminary note

1.1 Symbols used

▶   Instruction

>   Reaction, result

[…]   Designation of keys, buttons or indications

→   Cross-reference

⚠   Important note
Non-compliance may result in malfunction or interference.

ℹ   Information
Supplementary note.

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1.2 Terms and abbreviations

- ARTICLE:
  Placeholder for the name of the article = article designation of your unit.

- MODE:
  Placehoder for the operating mode. The different operating modes are identified MODE_A, MODE_B, or without any identification.

> [!] Prior to set-up, please read the supplied operating instructions for all articles described below.

> [i] The present instructions are an addition to the operating instructions.
>
> In the following, the options for changing the operating modes of ifm devices will be described.

> [!] If the unit is connected to an IO-Link master, a factory reset initiated on the unit can be reversed.

2 Operating modes

The operating mode can be selected as follows:

- By selecting it on the unit ($\rightarrow$ operating instructions of the unit)
- Using the memory plug E30398 ($\rightarrow$ 6)
- Via the LR DEVICE software QA0012 ($\rightarrow$ 4)
- By setting the vendor ID and the device ID at the IO-Link master port ($\rightarrow$ 5)

Each operating mode has its own IODD ($\rightarrow$ 3) and Device ID. It is identified by extending the ifm article designation. The differences between the operating modes are explained in the operating instructions of the article.
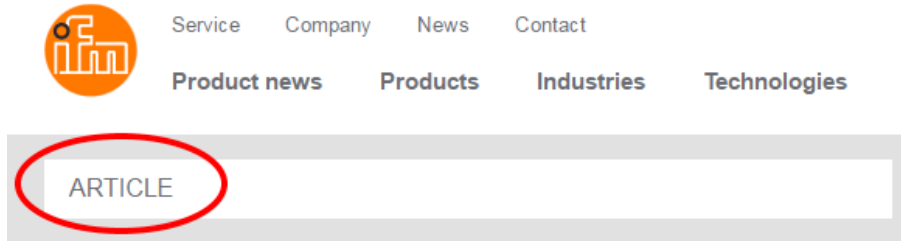
3 Finding the IODD

For each IO-Link device, there is a device description file that can be read by machines = IODD (IO Device Description).

The following options are available:
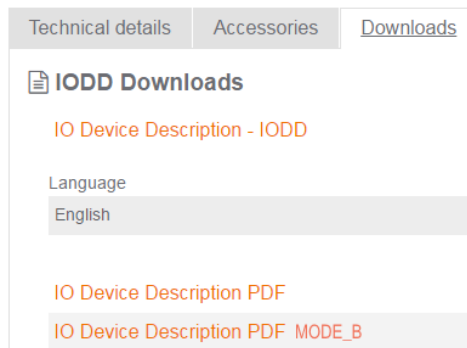
3.1 Searching the article on the ifm website

▶ Go to www.ifm.com.

▶ Enter the article number in the search bar.

> The article page will be shown.

▶ Select the "Downloads" tab.

▶ Open the IO Device Description PDF for the required operating mode and language.

▶ Get the IODD information.

Each operating mode has its own Device ID. See IO Device Description PDF in the operating mode:
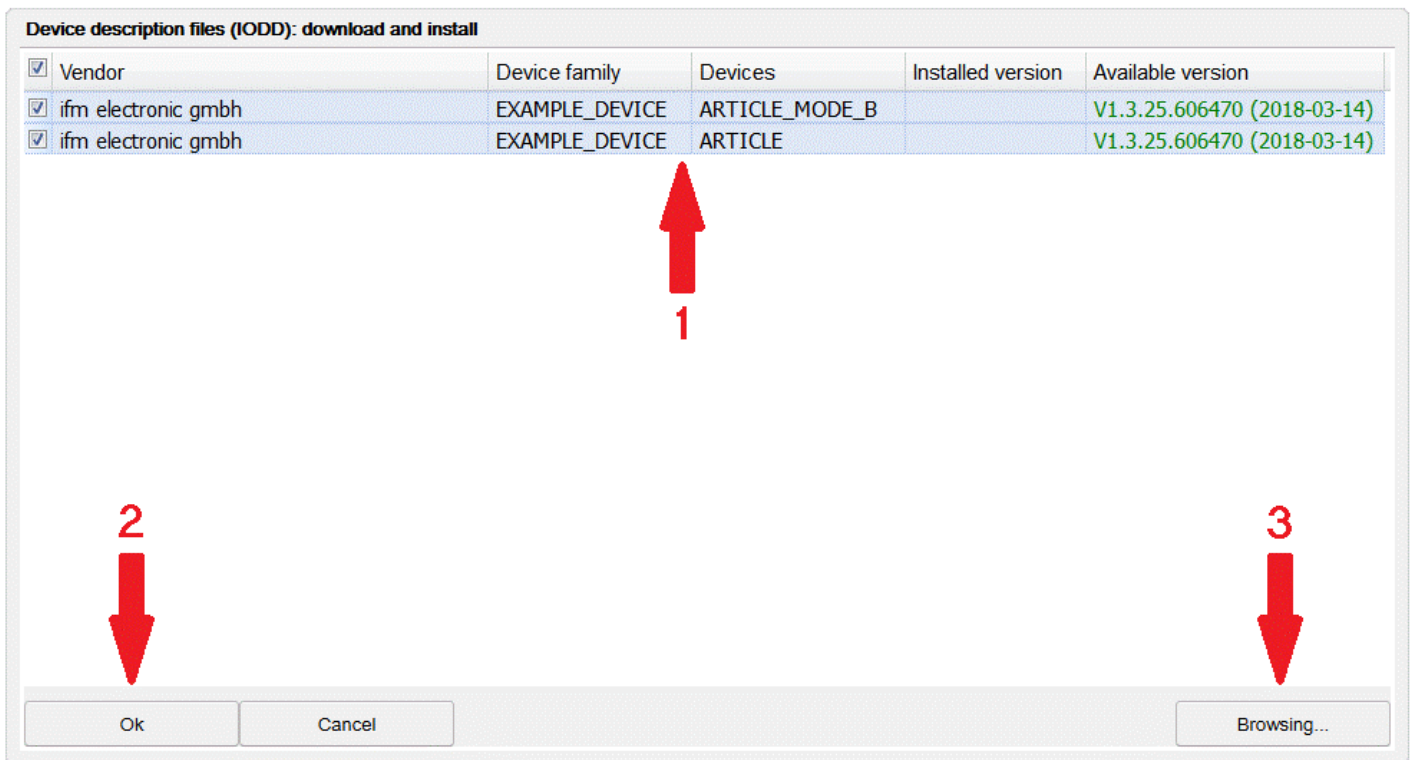
3.2 LR Device Updates

The LR Device software features IODDs for ifm devices. If the required IODD is missing, it can be loaded into the software using the selected cloud symbol:

▶ Select the cloud symbol

> The download window opens


> The missing IODDs (1) are shown in the table

▶ Select the required IODDs and load them into the LR DEVICE software by clicking Ok (2)

> IODDs that do not automatically appear in the table can be selected manually via the Browsing button (3).

> If the cloud symbol is pink, new IODD files are available for download. This requires an online connection.

3.3 IODD finder

The IODDs for an IO-Link operating mode are accessible via the following link: http://www.io-link.com
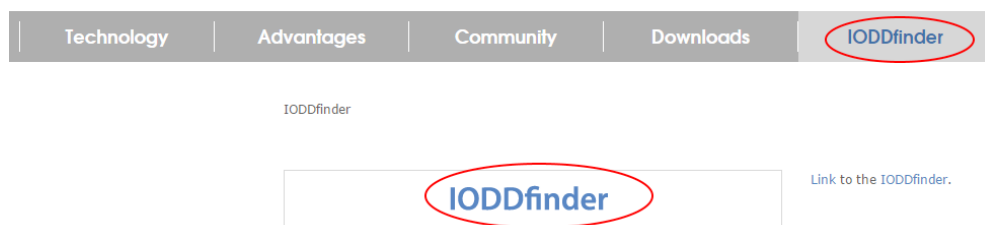
IODD examples of the ARTICLE operating modes:

4 Operating mode selection using a PC with LR Device

4.1 System requirements

• The device is connected to an IO-Link master from ifm electronic.

• The IO-Link master is connected to a PC.

> ⓘ When using the USB interface E30390, make sure you are using the required version: firmware 2.1.5 – 1.2.5 or higher (production after 17/02/2016, see label on the unit).

• The LR Device software is installed on the PC.

> ⓘ Detailed function description
> → Operating instructions QA0012 at www.ifm.com.

• The current IODD for your device is available (→ 3 Finding the IODD).

4.2 Setting the operating mode

1. ▶ Connect the device to the PC via the IO-Link master and read the parameter settings via LR Device.
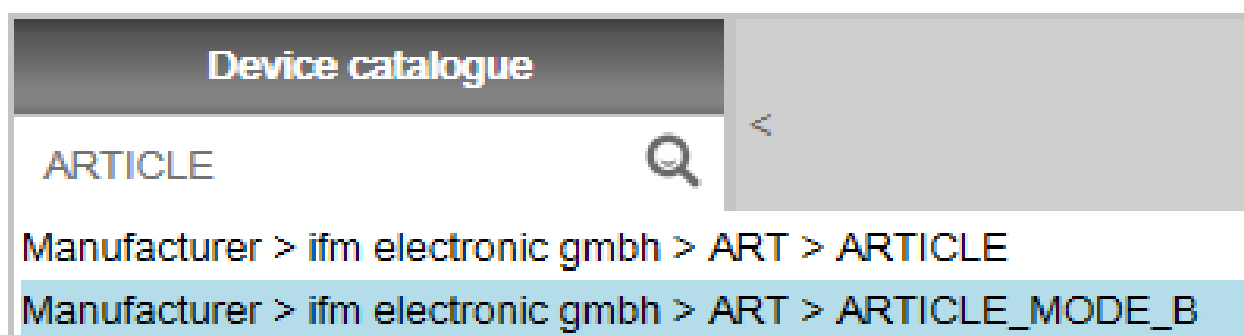
ⓘ When using an AL type master, the port to which the required device is connected must be selected first.
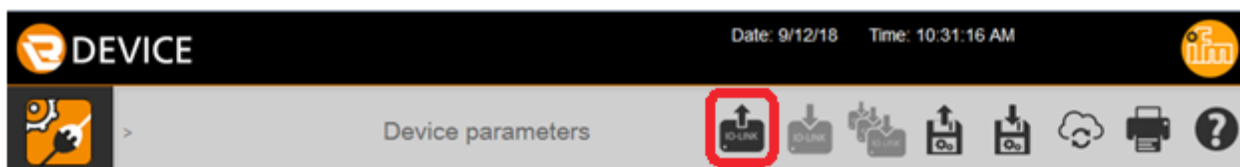
ⓘ Each operating type has its own product ID.

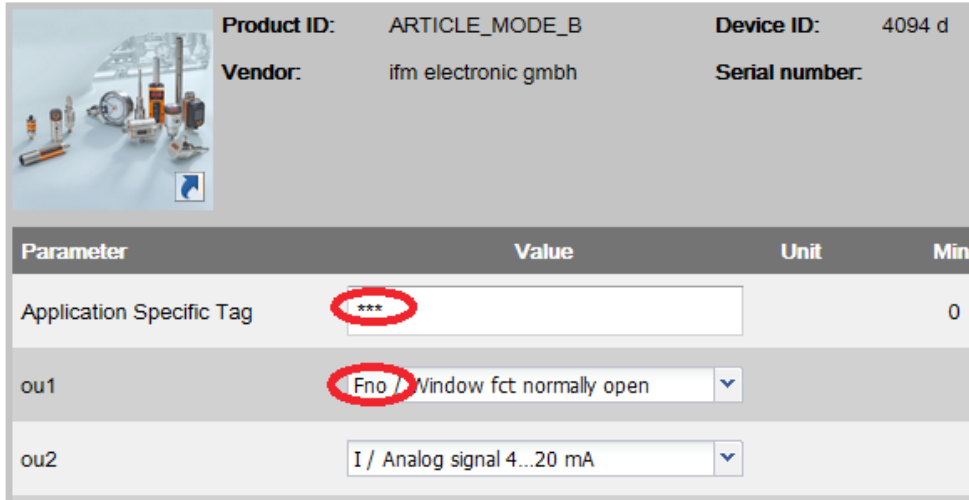> The device is indicated with its current operating mode.

2. ▶ Select the IODD for the required operating mode from the offline catalogue.
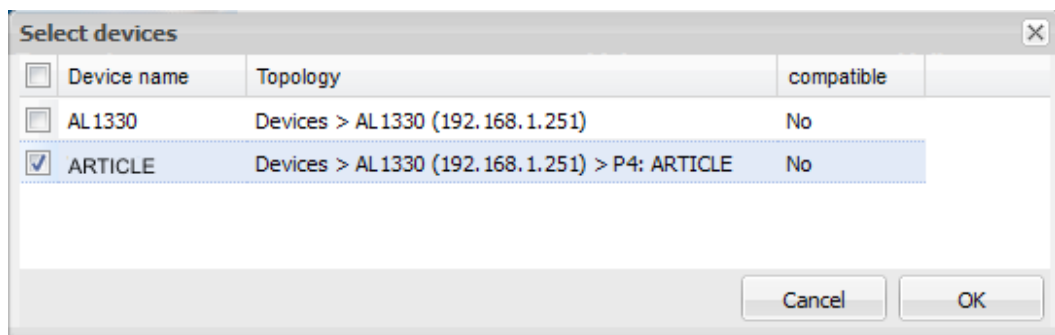
3. ► Change the parameter setting of the device.

Here, the factory setting is changed using different parameters.

Parameter	Value	Unit	Min
Product ID: ARTICLE_MODE_B		Device ID: 4094 d	
Vendor: ifm electronic gmbh		Serial number:	
Application Specific Tag	***		0
ou1	Fno / Window fct normally open		
ou2	I / Analog signal 4...20 mA		

4. ► Write the parameter set to the device.

Date: 9/12/18   Time: 10:35:14 AM
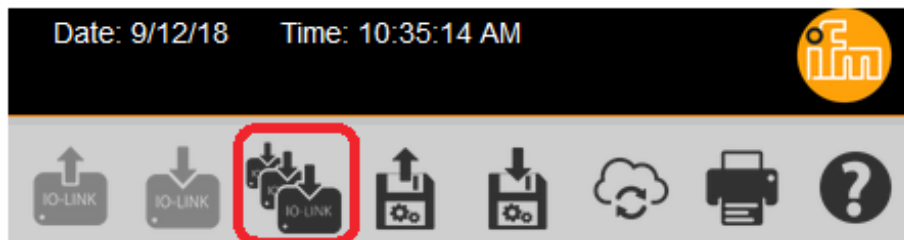
Select devices			×
Device name	Topology	compatible	
AL1330	Devices > AL1330 (192.168.1.251)	No	
☑ ARTICLE	Devices > AL1330 (192.168.1.251) > P4: ARTICLE	No	

| Cancel | OK |

ℹ The entry compatible = "No" can be ignored.

> Writing data to device.

> The device reboots and will now be in the newly selected operating mode.

5 Settings on the IO-Link master port via the PLC

5.1 Determine vendor ID and device ID

▶ The vendor ID and device ID for the respective device and the required operating mode can be found at www.ifm.com (→ 3.1).

> ⚠ Ensure that at least "type compatible" is selected for Validation/Data!
> If it is set to "no check and clear", the vendor ID and the device ID will not be checked. → The operating type will not be changed!

> ⚠ The process values and gradients of the corresponding operating type that are indicated in the IO Device Description PDF must be considered and, if necessary, adapted to the PLC program.
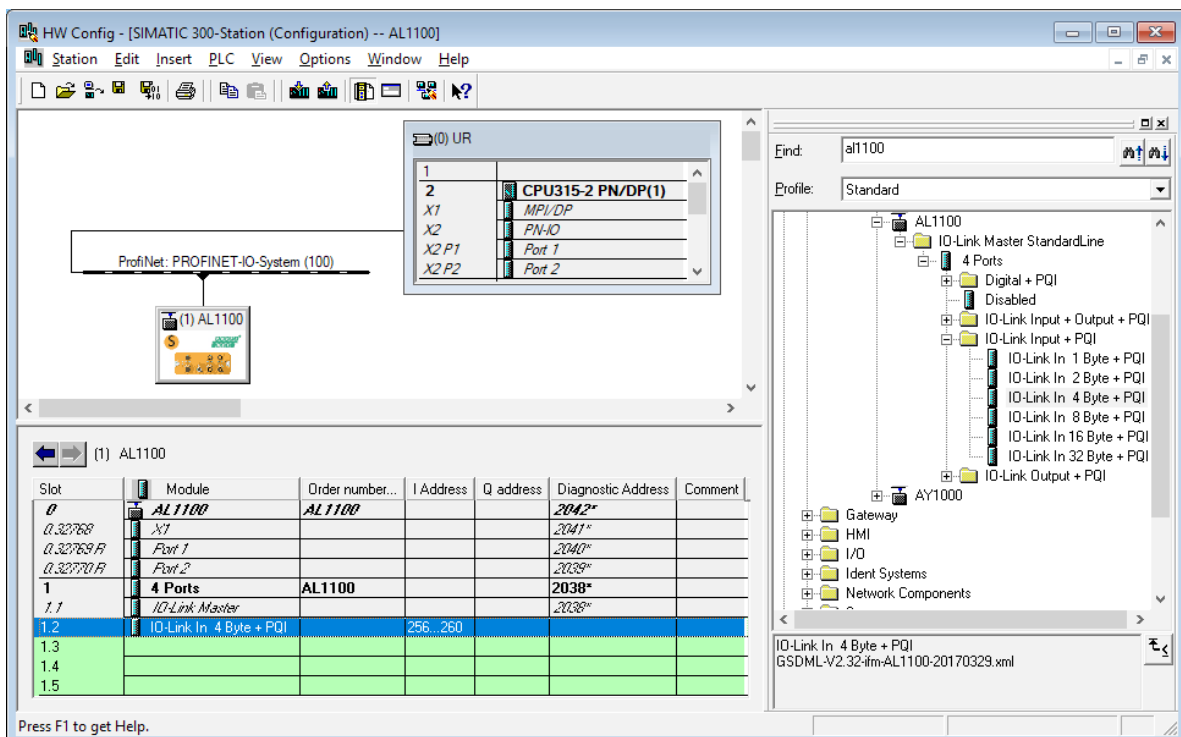
5.2 Set the vendor ID and device ID at the master port

> ℹ In the following examples, the software Siemens Step7 and TIA Portal is used with ifm's AL1100 IO-Link master. The procedure may be slightly different for other control systems and IO-Link masters.

5.2.1 Example with Siemens Step7

▶ Select the module IO-Link with the corresponding input width and drag and drop it to the respective port.
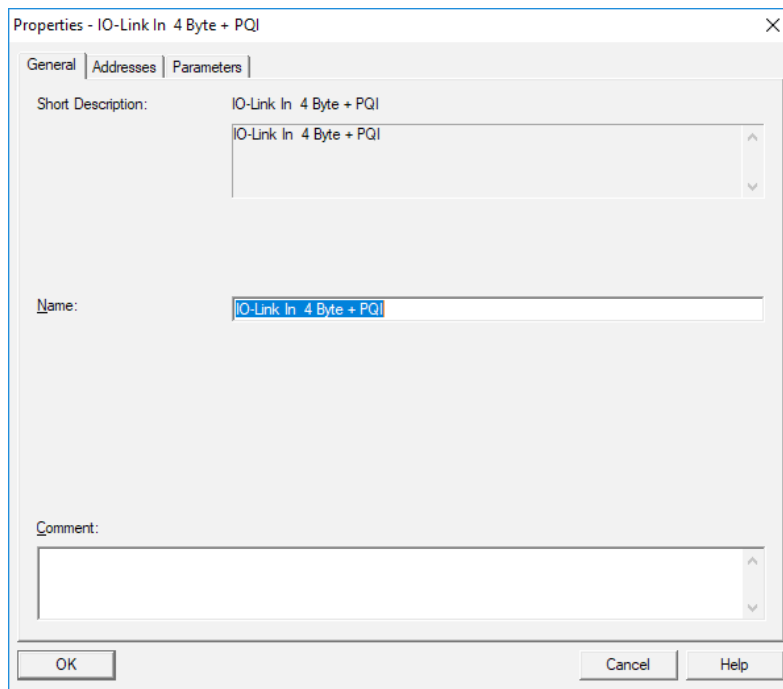
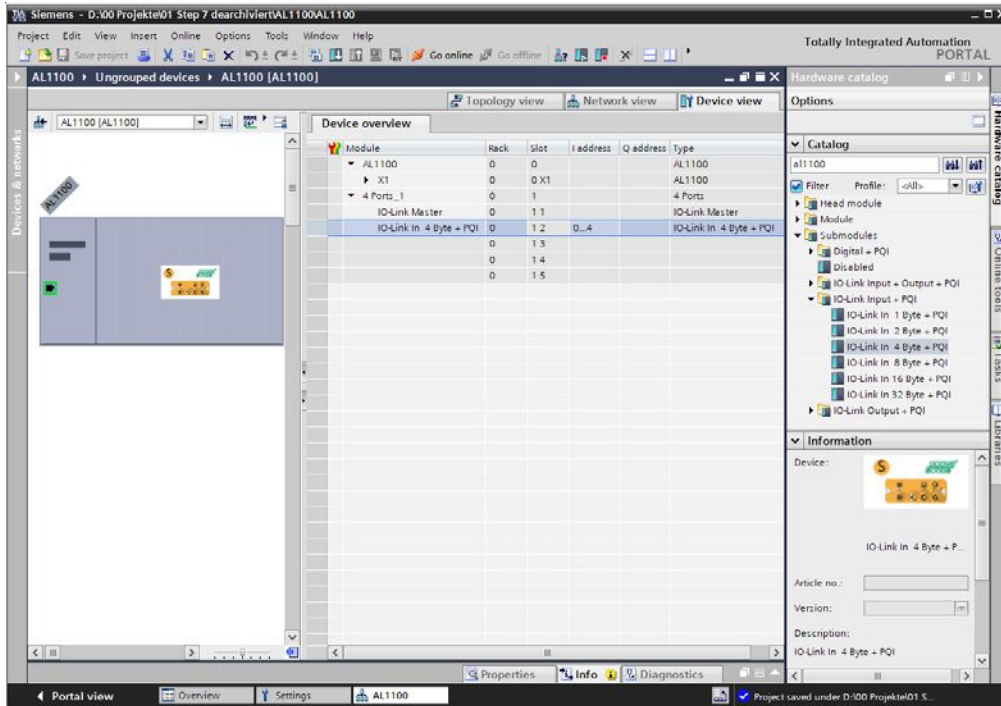▶ Double-click the module to open the Properties window.

▶ Select the "Parameter" tab and enter the vendor ID and the device ID (→ 5.1).
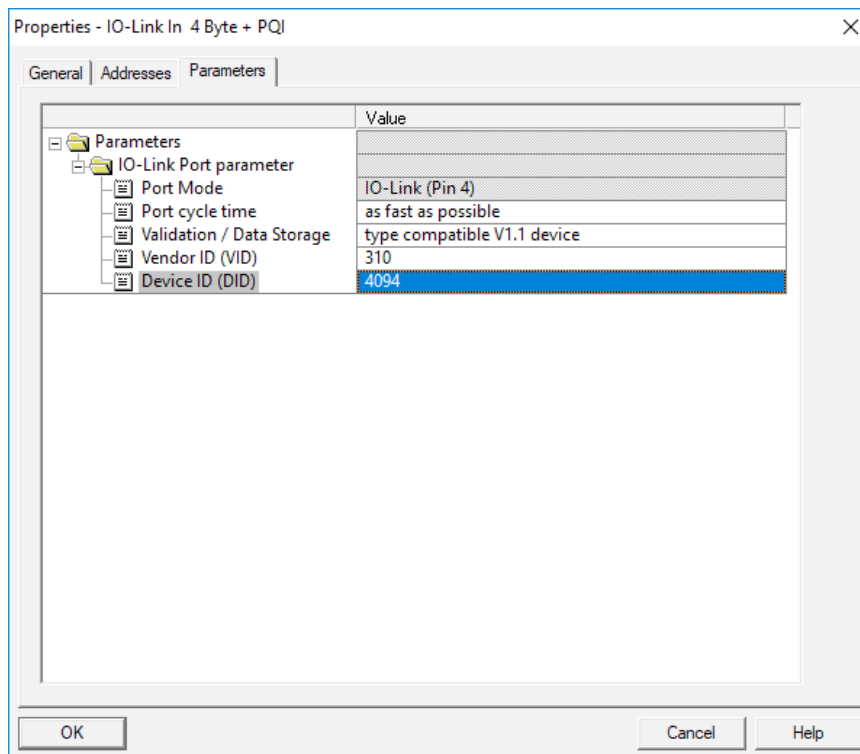
> The master requests the set operating type (device ID) when establishing communication. The connected IO-Link Device switches over automatically.

5.2.2 Example with Siemens TIA Portal

▶ Select the module IO-Link with the corresponding input width and drag and drop it to the respective port.

▶ Double-click the module to open the Properties window.

▶ Select the "Module Parameter" tab and enter the vendor ID and the device ID (→ 5.1).
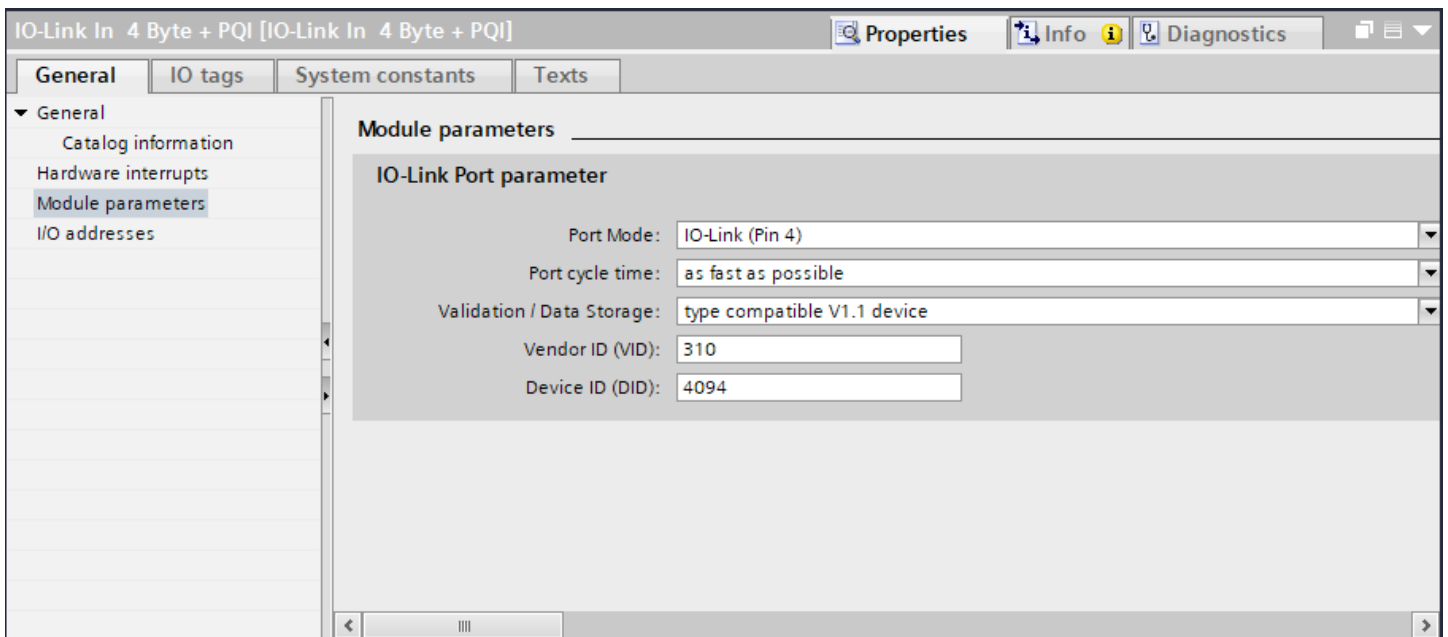
> The master requests the set operating mode (DeviceID) when establishing communication. The set IO-Link device switches over automatically.

6 Operating mode selection via memory plug E30398

Select this method if a compatible replacement unit is used.

ⓘ Compatible = replacement unit / device of the same type adopts the operating mode of the original device.

Using the memory plug E30398, it is possible to duplicate the parameter set and therefore the operating mode of a sensor to several sensors of the same type.

ⓘ ▶ Check the compatibility of the replacement unit according to the operating instructions.
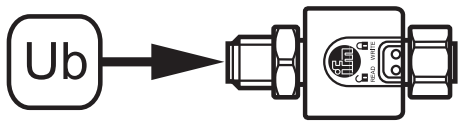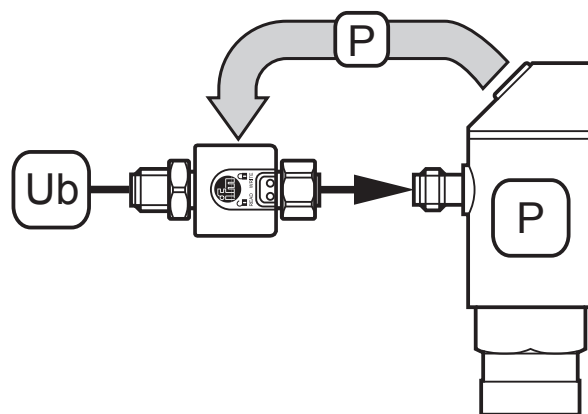
6.1 System requirements

ⓘ Detailed function description:
→ operating instructions E30398 at www.ifm.com.

▶ The original unit and the replacement unit are compatible.

6.2 Procedure

1. Set the operating mode on the sensor:

2. Save the parameter set of the sensor on the memory plug:

Requirement: The memory plug is used as delivered (empty / [Write protected]) ▶ Connect the memory plug to the supply voltage. 	 READ WRITE
▶ Connect the memory plug and the device. > The memory plug reads the parameter set of the device and saves it. 	 READ WRITE Reading process READ WRITE Process terminated. Memory plug full / [Write protected].

3. To transfer the parameter set to other devices:

▶ Connect the memory plug to the supply voltage.	🔓 READ 🔒 WRITE ○ ●
▶ Connect a compatible device with the memory plug. > The memory plug writes its parameter set to the device.	🔓 READ 🔒 WRITE ○ ✳ Writing process 🔓 READ 🔒 WRITE ○ ● Process terminated
▶ Repeat the process with sensors of the same type as often as you wish.	
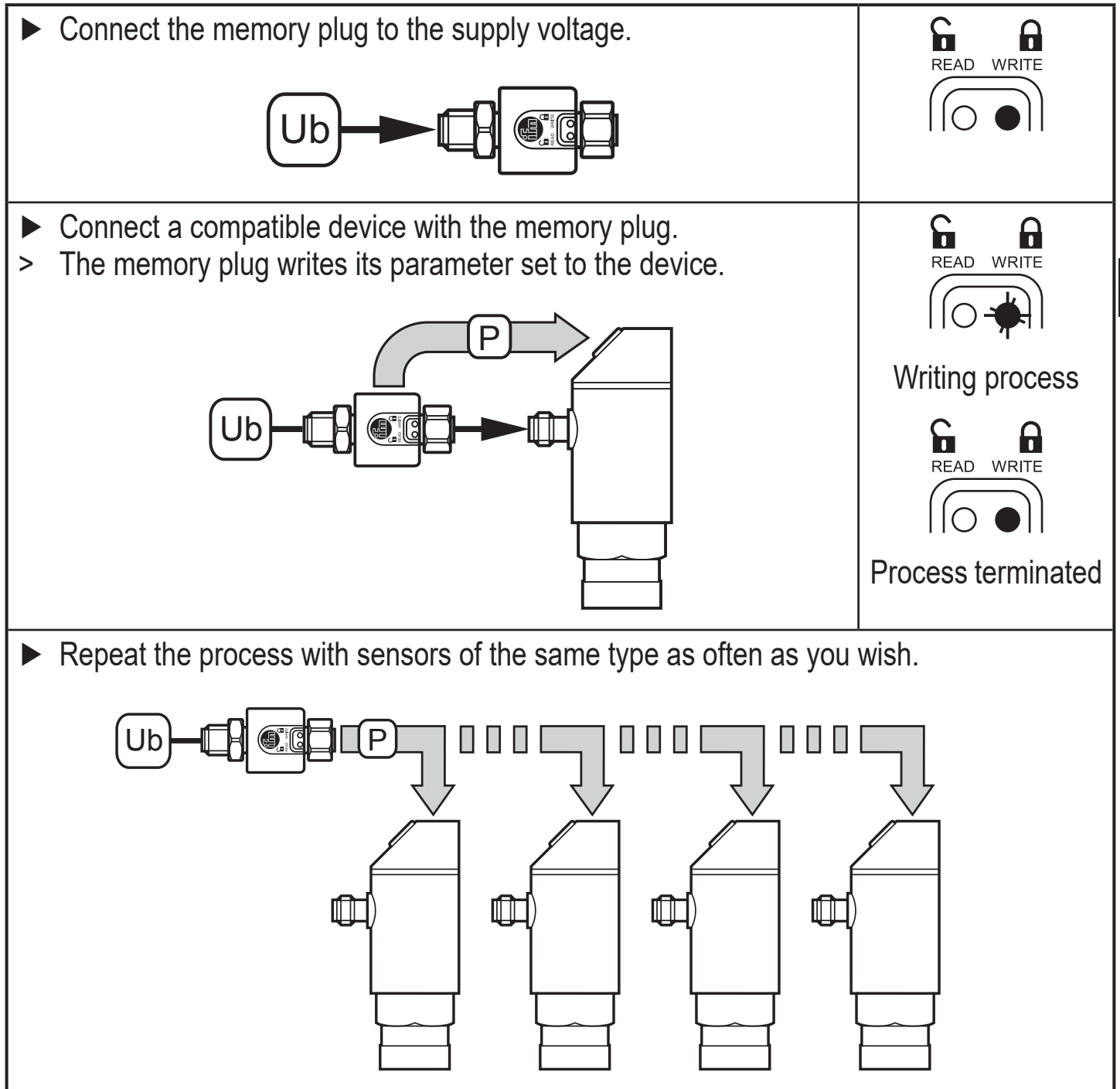
More information at www.ifm.com