



Operating instructions  
IO-Link Master Display 1.44"

**GB**

**E30443**

11381223 / 00 08 / 2022

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# 1 Preliminary note

You will find instructions, technical data, approvals and further information using the QR code on the unit / packaging or at [www.ifm.com](http://www.ifm.com).

## 1.1 Symbols used

- ✓ Requirement
- ▶ Instructions
- ▷ Reaction, result
- [...] Designation of keys, buttons or indications
- Cross-reference
-  Important note  
Non-compliance may result in malfunction or interference.
-  Information  
Supplementary note

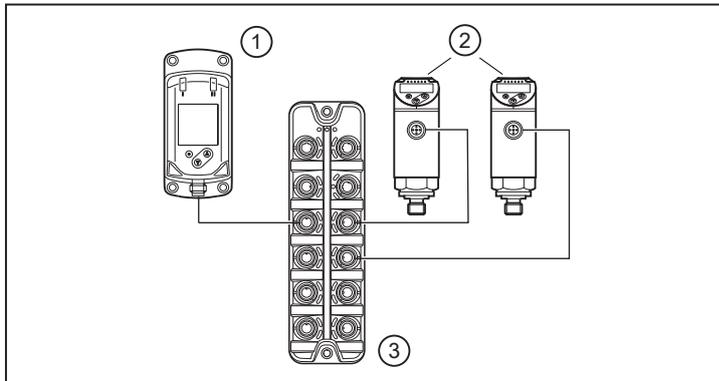
## 2 Safety instructions

- The device described is used in a system as subcomponent.
  - The system architect is responsible for the safety of the system.
  - The system architect undertakes to perform a risk assessment and to create documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the architect of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ → Intended use).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, electrical connection, set-up, operation and maintenance of the product must be carried out by qualified personnel authorised by the machine operator.
- Protect devices and cables against damage.

### 3 Intended use

The IO-Link Master Display is used for indicating information and process values of the connected ifm IO-Link sensors.

The sensors connected to the master cannot be configured via the IO-Link Master Display.



- 1: IO-Link Master Display 1.44"
- 2: IO-Link sensors
- 3: IO-Link masters

Fig. 1: Example of a system integration

## 4 Getting started

### 4.1 Set-up

Set-up is not necessary. Nevertheless, it is possible to change the default settings.



In case the connected ifm device cannot be displayed:

▶ Carry out the following steps:

Load the device catalogue in moneo configure.

Write the device catalogue to the display.



If the device is on the blacklist (= not supported), a message is indicated on the display:

▷ device not supported.

## 5 Function

During operation the IO-Link Master Display indicates the process values of the IO-Link sensors connected to the master. The process value to be indicated and the IP address of the master can be set via the menu. Besides, additional information about the master and the sensors can be displayed.

This device uses an ifm-specific IoT Core communication via IO-Link. The number and the scope of functions of the connectable devices of this type (e.g. E30443 and EIO330) depend on the firmware version of the IO-Link master used.

The corresponding port of the master must be configured as an IO-Link port.

## 6 Mounting

- ▶ Insert the device into the system so that no mechanical forces are exerted on the housing.

## 7 Electrical connection

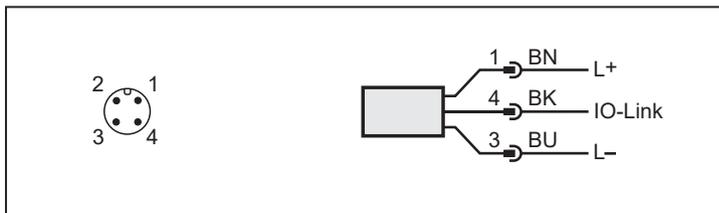


The device must be connected by a qualified electrician.

The national and international regulations for the installation of electrical equipment must be adhered to.

Supply voltage SELV, PELV according to the technical data sheet.

- ▶ Disconnect power.
- ▶ Connect the device as follows:



Pin	Core colour	
1: L+	BN	Brown
4: IO-Link	BK	Black
3: L-	BU	Blue
Colours to DIN EN 60947-5-2		

## 8 Operating and display elements

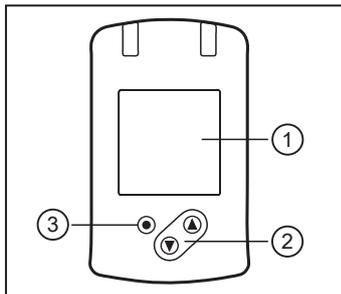
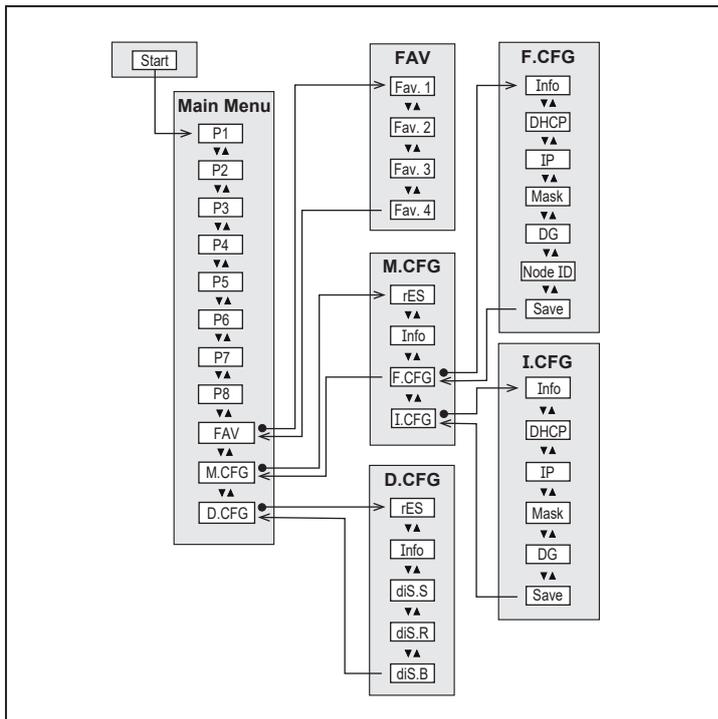


Fig. 2: Operating and display elements

<b>1: TFT display</b>
<ul style="list-style-type: none"> <li>• Indication of current process values</li> <li>• Display of the parameters and parameter values</li> </ul>
<b>2: Buttons up [▲] and down [▼]</b>
<ul style="list-style-type: none"> <li>• Select parameters</li> <li>• Change parameter values (hold button pressed)</li> </ul>
<b>3: [●] key = Enter</b>
<ul style="list-style-type: none"> <li>• Change from the RUN mode to the main menu</li> <li>• Change to the setting mode</li> <li>• Apply the set parameter value</li> </ul>

## 9 Menu

Process value display (RUN mode)



### 9.1 Explanation main menu

P1 - 8	<p>Information about the sensors on ports 1 – 8</p> <ul style="list-style-type: none"> <li>– All process values</li> <li>– Information about the device</li> <li>– Device events</li> </ul> <p> Only ports to which a sensor is connected are available. If the Master Display is connected to the selected port, information about the master is displayed.</p>
FAV	Opening of the lower menu level favourite setting
M.CFG	<p>Opening of the lower menu setting master setting</p> <p> The menu level M.CFG is only available if the display is connected to a suitable ifm master.</p>
D.CFG	Opening of the lower menu setting display setting

### 9.2 Explanation favourite settings (FAV)

Fav1- Fav.4	<p>Setting of favourites 1 – 4:</p> <p>The favourites consist of the process values indicated in the RUN mode.</p> <p>PX.PVY = Display process value Y of port X.</p>
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### 9.3 Explanation master settings (M.CFG)

rES	Restore factory setting of the master
Info	Information about the IO-Link master, e.g. designation of the master, application-specific tag, IP addresses, firm-ware version, serial number.

F.CFG	Opening of the lower menu level fieldbus configuration
I.CFG	Opening of the lower menu level IoT port configuration

## 9.4 Explanation fieldbus configuration (F.CFG)

Info	Information about the fieldbus
DHCP	DHCP option of the fieldbus interface
IP	Configuration of the IP address of the fieldbus interface of the master
Mask	Configuration of the subnet mask of the fieldbus interface of the master
DG	Configuration of the IP address of the default gateway
Node ID	Configuration of the node ID - only for fieldbus (if necessary, it replaces the IP address and subnet mask)
Save	Save fieldbus configuration



When the fieldbus configuration has been changed, it has to be saved. If this is not made manually via the menu item "Save", a note is displayed and the configuration is automatically saved.

## 9.5 Explanation IoT port configuration (I.CFG)

Info	Information about the fieldbus
DHCP	DHCP option of the fieldbus interface
IP	Configuration of the IP address of the fieldbus interface of the master
Mask	Configuration of the subnet mask of the fieldbus interface of the master
DG	Configuration of the IP address of the default gateway
Save	Save fieldbus configuration



When the IoT port configuration has been changed, it has to be saved. If this is not made manually via the menu item "Save", a note is displayed and the configuration is automatically saved.

## 9.6 Explanation display settings (D.CFG)

rES	Restore factory setting of the display
Info	Information about the display, e.g.: article number, serial number, firmware version
diS.S	Background colour scheme of the display: dark = black, light = white
diS.R	Display rotation in degrees: 0, 90, 180, 270
siS.B	Display brightness: 25, 50, 75, 100, OFF

## 10 Configuration

### 10.1 Parameter setting in general

1. Change from the RUN mode to the main menu	[●]
2. Select the requested parameter	[▲] or [▼]
3. Change to the setting mode	[●]
4. Modification of the parameter value	[▲] or [▼] > 1 s
5. Apply the set parameter value	[●]
6. Return to the RUN mode	> 30 s (timeout) or press [▲] and [▼] simultaneously until the RUN mode is reached.

### 10.2 Updating the device catalogue

#### 10.2.1 System requirements

##### As of moneo version 1.9:

- ▶ Connect the display to a PC via an IO-Link master.



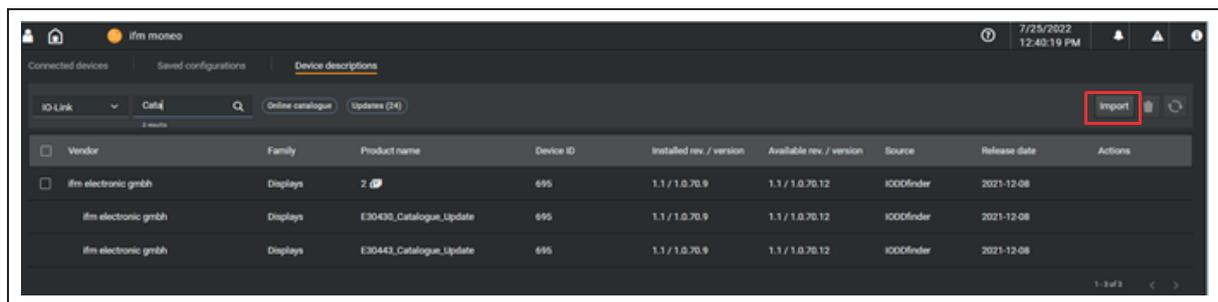
No controller (PLC) must be connected.

#### 10.2.2 Loading the device catalogue in moneo configure

If moneo is connected to the internet, all catalogue update files are automatically imported by the IO-Link Finder.

The catalogue update files can also be imported manually:

- ▶ Switch to the [Device description] tab.
- ▶ Click on [Import].
- ▶ Select the required IO-Link or the catalogue from the path.



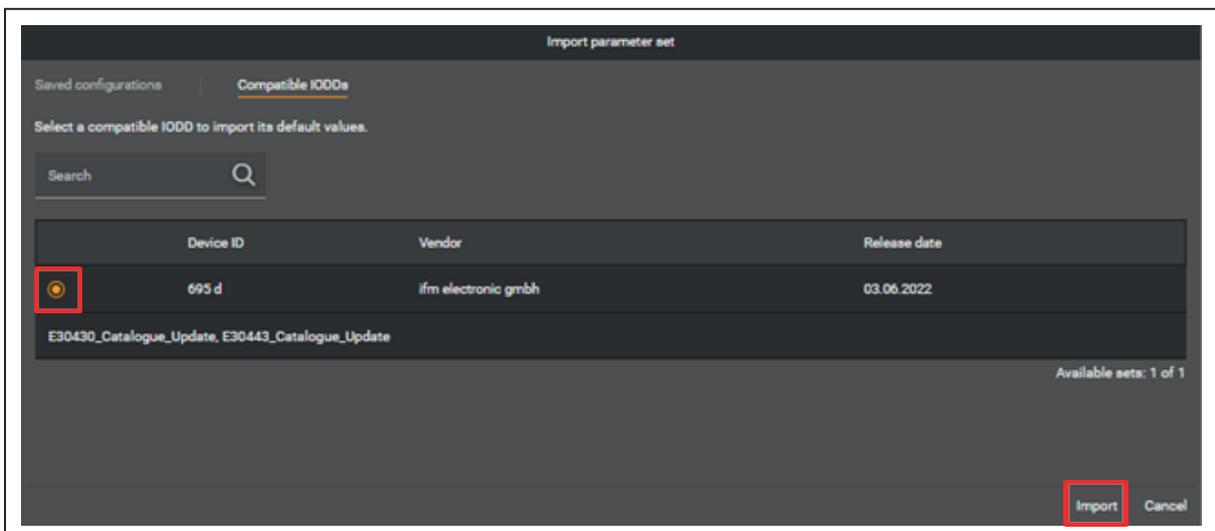
#### 10.2.3 Writing the device catalogue to the display

Connect the display to an ifm AL1xxx IO-Link master and connect this master to a PC or laptop.

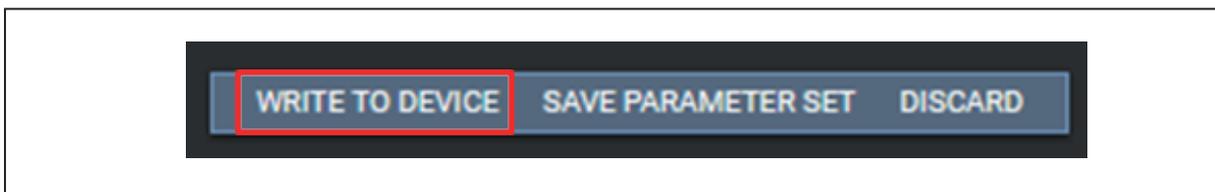
- ▶ Start moneo configure
- ▶ Carry out a network scan
- ▶ Select the corresponding ifm AL1xxx IO-Link master or, if applicable, port.
- ▶ Read the display settings



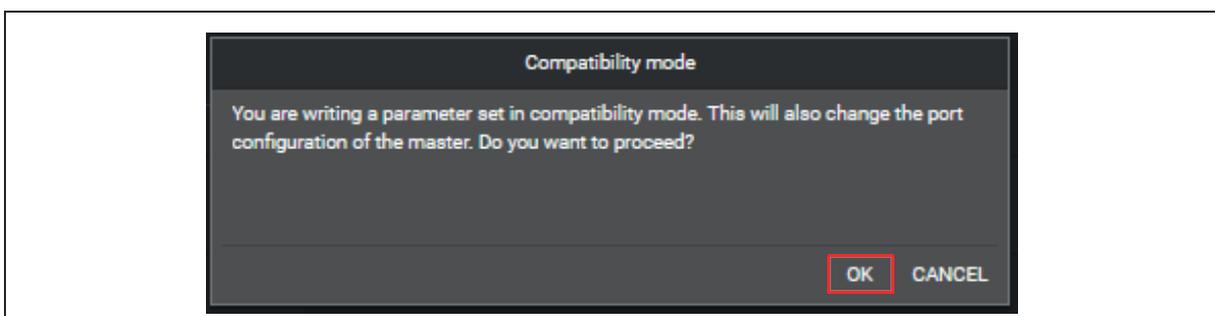
- ▶ When the display is shown in the moneo software, click on [Import] at the top right.



- ▶ In the [Compatible IOODs] tab, select the device catalogue and confirm with [Import].



- ▶ Write the device catalogue to the display.
- ▷ A note on the compatibility mode of the AL master is displayed. The port configuration of the master port is automatically reconfigured. If necessary, this should be changed back after the write process.



- ▶ Acknowledge with [OK].
- ▷ When the write process is finished, the new device catalogue is integrated in the display.



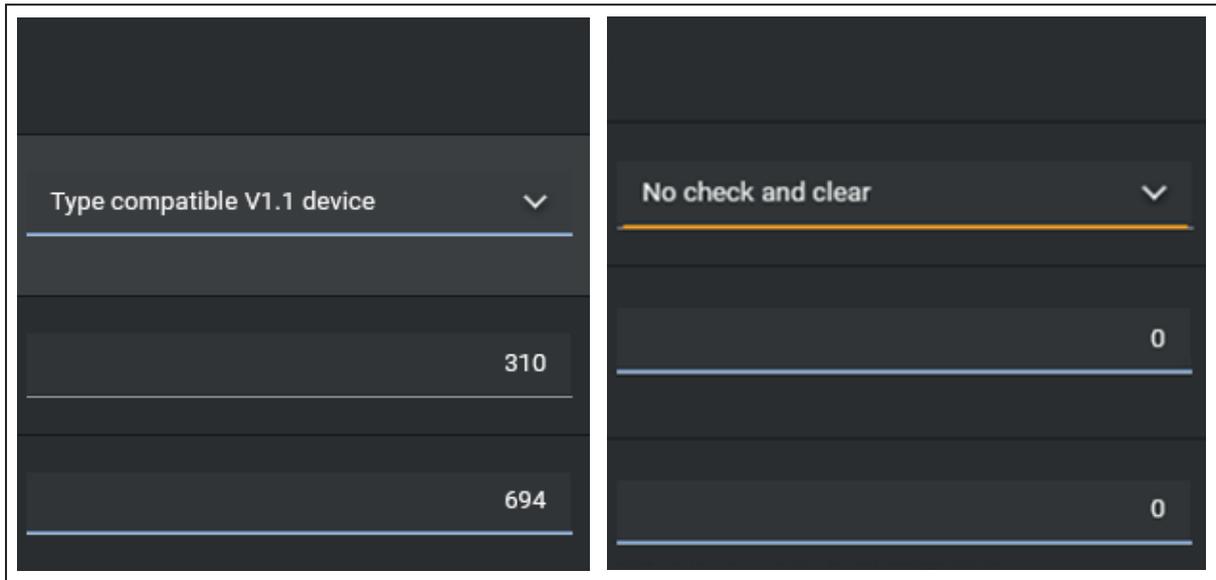
Do not disconnect the display from the IO-Link master during the write process. Otherwise the update of the device catalogue is faulty and needs to be repeated.

- ▶ Restart the INLINE DISPLAY with [Power Off / On] (note port configuration).

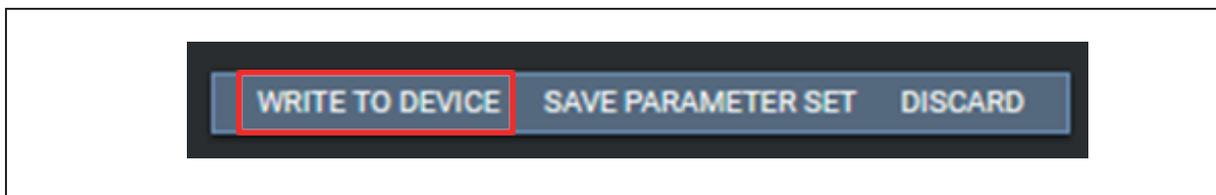
### 10.2.4 Resetting the AL master port

When the catalogue is written, the master port switches to compatibility mode. This is necessary for the AL IO-Link master to be able to transfer the catalogue to the display.

- ▶ Via moneo, switch to the settings of the AL master and set the port back to the original setting or [No check and clear]. If necessary, set the vendor and device ID to default.



- ▶ Load the settings back to the AL master.



# 11 Troubleshooting

## 11.1 Warning messages

Display (process value line)	Display (detailed view)	Description	Type	Instruction*)	
---	ERROR	Device faulty / malfunction	Error	▶ 1	
	OFF	Supply voltage too low	Error	▶ 2	
	PARA	Parameter setting outside the valid range	Error	▶ 3	
	no connection	No IO-Link connection found	Error	▶ 4	
	unknown Master		Connected to a master that does not support this type of display	Error	▶ 5
			Parameter "Access rights" set in the master so that the display cannot be addressed ("read only")	Error	▶ 6
unknown dev.	Unknown ifm device try catalogue update	No process data description available for ifm device	Error	▶ 7	
	Unsupported device of vendor <xxx>	No process data description available for non-ifm device	Error	▶ 8	
no IO-Link	NO IO-Link Device	Device has no IO-Link interface or IO-Link communication is not active	Error	▶ 9	
invalid	Invalid process data description	The process data description does not match the communication content	Error	▶ 10	
	invalid	Invalid flag of the process data is set	Error	▶ 11	
---	Device not supported	Message if blacklist device	Message	▶ 12	
---	invalid device catalogue, try catalogue update	Device catalogue is invalid	Error	▶ 13	
Invalid	invalid	Invalid digit of the process date	Warning	▶ 14	
---	Lock symbol	Setting buttons on the device locked, parameter change rejected	Warning	▶ 15	
		Parameter setting locked via pushbuttons, parameter setting is active via IO-Link communication	Warning	▶ 16	
		Setting buttons locked via parameter setting software, parameter change rejected	Warning	▶ 17	
config Error	---	Selected process value is not available	Warning	▶ 18	
no proc. data	No process data available	No process data available	Message	▶ 19	
---	loading data from master	Message indicated during connection establishment with the master	Message	▶ 20	
	loading device data	Message indicated during loading of the device information	Message	▶ 22	
---	writing data to master	Message during the block write process to the master	Message	▶ 22	

Display (process value line)	Display (detailed view)	Description	Type	Instruction*)
---	Master is resetting	Message while the master makes a reset to the factory setting	Message	► 23
---	Master is rebooting	Message while the master reboots	Message	► 24
---	Catalogue Mode	Message in catalogue mode	Message	► 25
---	Reset failed 403 - forbidden	Message if the master could not successfully complete the reset	Error	► 26
---	Error 532 PLC connected	Message while the master is connected to the PLC and it is tried to change the IP address	Error	► 27

## 11.2 Instructions

Instruction*) / Information	
1	► Replace device
2	► Ensure a voltage supply with a sufficiently available current. (18...30 V DC)
3	► 1. Note down the set parameters 2. Factory reset 3. Re-enter parameters
4	► Check cable connections ► Check IO-Link master ► If necessary, re-establish the communication
5	► Use ifm master with display support
6	► Adapt setting of the parameter "Access rights"
7	Device catalogue no longer up to date ► Device catalogue update: device catalogue download for ifm devices at <a href="http://www.ifm.com">www.ifm.com</a>
8	The connected device is not in the device catalogue
9	Connected device not equipped with IO-Link ► Check the cable connections of the device ► Check correct operation of the connected device ► If necessary, re-establish the communication
10	Error during decoding of the process data ► Update of the device catalogue
11	The process value of the connected device is marked as invalid
12	Device not operating
13	Faulty device catalogue ► Reinstall device catalogue
14	Device transmits invalid errors ► Check the connected device
15	► Unlock device → Operating and display elements
16	► Wait until the parameter setting via the remote participant is finished
17	► Unlock the setting buttons via the parameter setting software
18	► Select an available process value of the corresponding device
19	The connected device is not transmitting any process data ► Wait until process data is transmitted
20	► Wait until the connection is established
21	► Wait until the data has been loaded

Instruction <sup>*)</sup> / Information	
22	▶ Wait until the write process is completed
23	▶ Wait until the reset to factory setting is completed
24	▶ Wait until the reboot of the master is completed
25	Information: Device is in catalogue mode for an update
26	▶ Check the access rights in the master
27	▶ Separate the connection between master and PLC

## 12 Maintenance, repair and disposal

The unit is maintenance-free.

- ▶ Contact ifm in case of malfunction.
- ▶ Do not open the housing as the unit does not contain any components which can be maintained by the user. The unit must only be repaired by the manufacturer.
- ▶ Clean the device using a dry cloth.
- ▶ Dispose of the unit in accordance with the national environmental regulations.