



# IO-Link Communication Tool SW 50



## Content

1	General information .....	2
1.1	Information on the operating instructions .....	2
1.2	Explanation of symbols .....	3
2	Information on safety .....	3
2.1	Information on the operating instructions .....	3
2.2	Destination and use .....	4
3	Scope of delivery .....	4
4	Installation.....	4
4.1	System requirements .....	4
4.2	Hardware Accessories .....	4
4.3	Install program on hard disk .....	5
5	Program start .....	6
5.1	Connect hardware.....	6
5.2	Possibility to connect several pyrometers to one PC.....	6
5.3	Starting the Software .....	7
5.4	Home screen.....	8
5.5	Loading and saving parameters.....	11
5.6	Parameter dialog 'Operation' .....	13
6	Basics of calibration.....	18
7	Performing a calibration.....	19

## 1 General information

### 1.1 Information on the operating instructions

These operating instructions are intended to enable the user to properly install the pyrometer and the necessary accessories and to perform a parameterisation or a calibration. Before starting the installation work, the operating instructions, in particular the chapter on safety, must be read and understood in full! The operating instructions with the safety instructions as well as the UV regulations valid for the field of application must be strictly observed!

## 1.2 Explanation of symbols

Important safety-related references in this manual are marked with a symbol.

### **ATTENTION**

This symbol points out guidelines. If you do not observe them, the device might be damaged, malfunctioning or even fail to operate.



#### Caution

This symbol points out hints and information which should be heeded for efficient and trouble-free operation.

- ▶ **Action:**  
This symbol instructs the operator to take action.
- > **Reaction, Result:**  
This symbol indicates the result of the action taken.

EN

## 2 Information on safety

### 2.1 Information on the operating instructions

- Please read this document before commissioning of the USB Master and the software.
- The product must be fully suitable for the relevant applications and environmental conditions.
- Only use the product for its intended purpose (→ Intended use).
- Only use the product for permitted media.
- Failure to observe application instructions or technical specifications may result in damage to property and/or personal injury.
- The manufacturer assumes no liability and no warranty for the consequences of interventions in the product or misuse by the operator.
- Installation, electrical connection, commissioning, operation and maintenance of the product may only be carried out by trained personnel.
- The device and accessories (e.g. cables) must be effectively protected against damage.

## 2.2 Destination and use

The interface and the communication tool connect the IO-Link compatible pyrometer to a PC. The following options are available via the IO-Link interface:

- Reading the current parameter setting
- Parameterizing the sensor
- Performing a Calibration/Adjustment

## 3 Scope of delivery

- 1) IO-Link Interface
- 2) USB cable
- 3) Plug-in power supply
- 4) Connecting cable M12
- 5) IO-Link Communication Tool SW 50 AF 1
- 6) Operating manual

## 4 Installation

### 4.1 System requirements

- PC with Microsoft Windows® 10
- Minimum resolution 1366x768 pixels
- Free USB 2.0 port or higher

### 4.2 Hardware Accessories

- USB IO-Link Master incl. plug power supply and connecting cable M12

### 4.3 Install program on hard disk

The IO-Link Communication Tool can be installed via the file index.html or manually by calling the file "IOLComToolSetup.exe".



You must have administrator rights for the installation.

- ▶ Insert the USB stick into the PC
- ▶ Start file "index.html" with double click
- > The menu for installing the communication tool opens
- ▶ Install the IO-Link Communication Tool via the button Installation ComTool
- > Setup window and license conditions are displayed
- ▶ Agree to the license terms, click [Install] and follow the installation instructions
- > Program is installed
- ▶ After successful installation, close the setup window

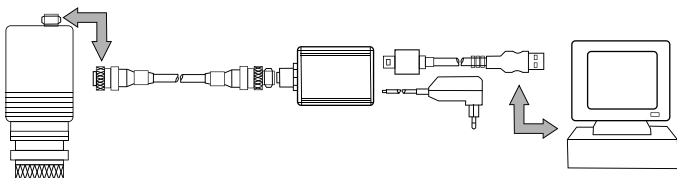


If not already installed, the .NET Framework 4.7.2 will be installed.

## 5 Program start

### 5.1 Connect hardware

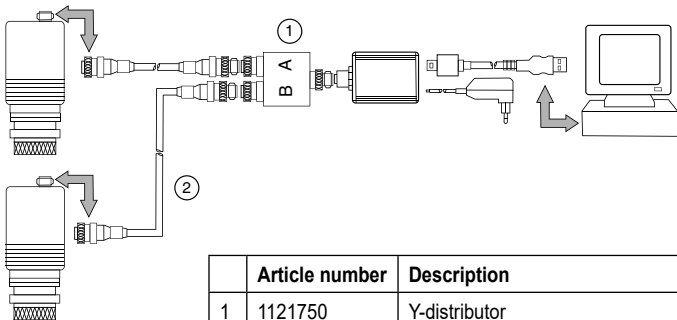
- ▶ Connect the USB IO-Link Master to the pyrometer via the M12 connection cable.
- ▶ Connect the power supply to the USB IO-Link master.
- ▶ Connect the USB IO-Link Master to the USB port of the PC.



- > The IO-Link Communication Tool recognizes the connected pyrometer(s) and displays the parameters.

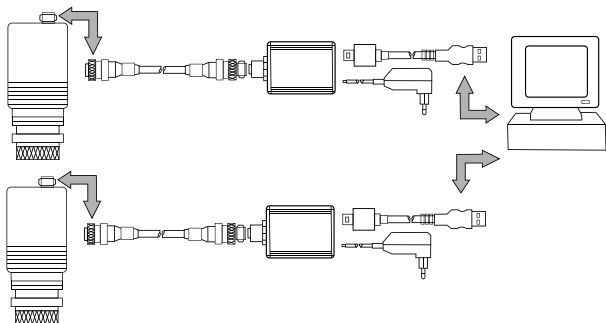
### 5.2 Possibility to connect several pyrometers to one PC

- ▶ Use of a Y-distributor



	Article number	Description
1	1121750	Y-distributor
2	1086480	Connection cable VK 03/A AF 1

► Use of a second IO-Link master



EN

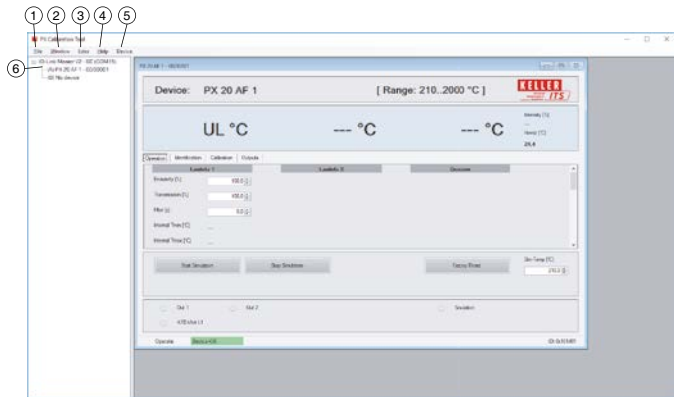
- > The connected pyrometers can be selected via the device list in the start screen.

### 5.3 Starting the Software

- Start the App IO-Link Communication Tool.
- > The start screen is displayed.



## 5.4 Home screen

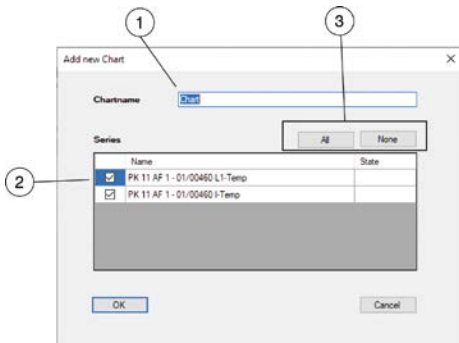


1	File Menü	Close communication tool
2	Window Menü	Selection of the parameter dialog of the connected pyrometers Minimizing or arranging the calibration dialog
3	Extra	<ul style="list-style-type: none"> <li>- Add new chart</li> <li>- Supported devices → List of supported devices</li> <li>- Setting → Selection of the time for the transmission of the cyclic data</li> </ul>
4	Help	License information of the software
5	Device	User Interface
6	Equipment list	Overview of the pyrometers connected to the master

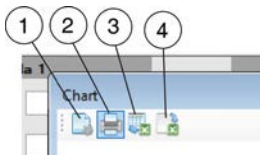


## Add new Chart

With „Add new Chart“, a chart is created in which the measured values are displayed graphically. In the dialogue, the chart name is assigned and the measured values to be recorded can be selected.



1	Chart name
2	Selection of the parameters to be recorded
3	Select all or none

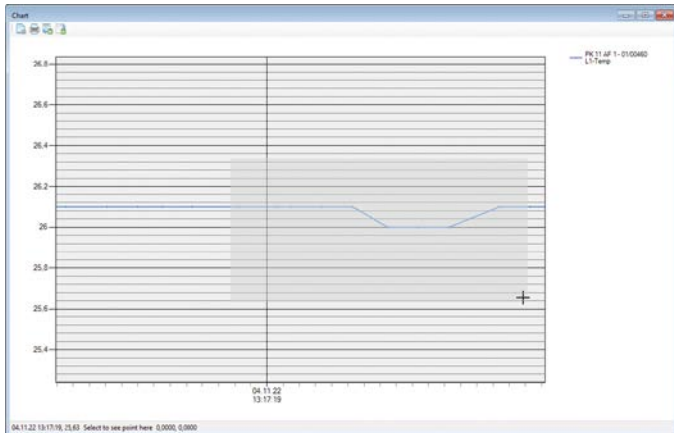


1	Page setup for printing
2	Print chart
3	Export all to Excel file
4	Export view to Excel file

## Area selection

You can enlarge certain areas of the chart by clicking and dragging the left mouse button to select the desired area from top left to bottom right.

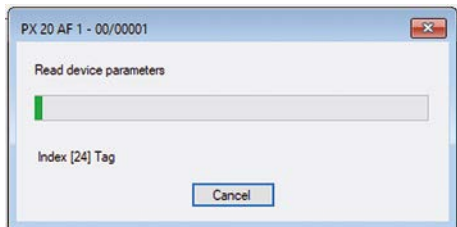
You can return to the original size display by holding down the left mouse button and dragging a frame within the chart to the upper left corner. The graph is updated again.



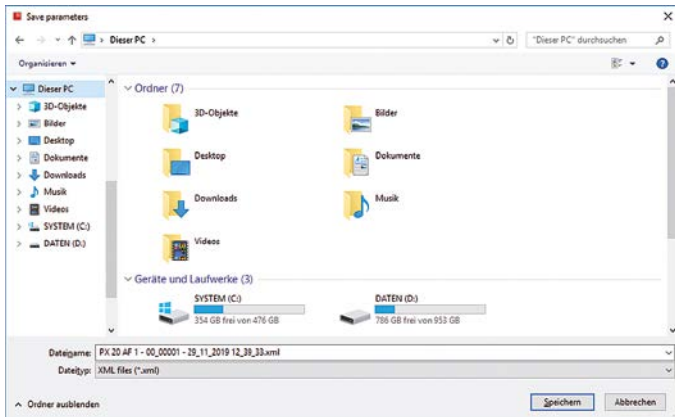
## 5.5 Loading and saving parameters

### Saving parameters

- ▶ Save the parameters using the Save Parameter function.
- > The parameters are loaded by the pyrometer.

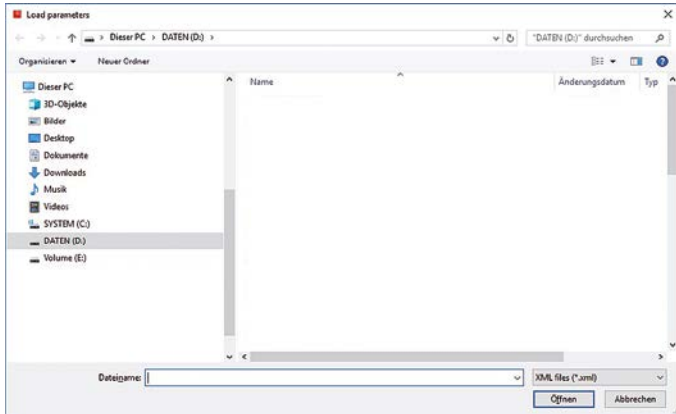


- ▶ Choose a location and save the parameter file.




## Load parameters

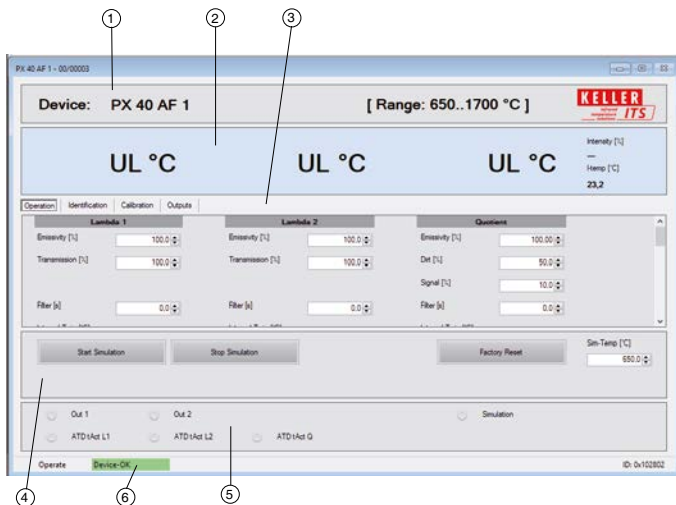
- ▶ Open the parameter file using the Load Parameter function.
- > The Load Parameter dialog opens.



- ▶ Select the desired parameter set and open it.
- > The parameter set is loaded and written to the pyrometer.

 The parameters are transferred directly to the pyrometer. The parameters can only be visualized after the transfer.

## 5.6 Parameter dialog 'Operation'



EN

1	Device	Display pyrometer designation and measuring range
2	Temperatures	Display of temperature values
3	Overview Parameters	Input of parameters of the desired category
4	Test/service functions	Activating the Test/Service Functions
5	Information	Representation of outputs
6	Status	Status indication of the pyrometer

## Category Operation



1	Header with information about the available measurement channels	Display of the available measuring channels of the pyrometer Lambda 1, Lambda 2 and quotient
2	Parameterization	Parameterization of the connected pyrometer

- ▶ Select the parameters you want to edit.
- > The changed values are immediately transferred to the pyrometer and saved.

## Category Identification

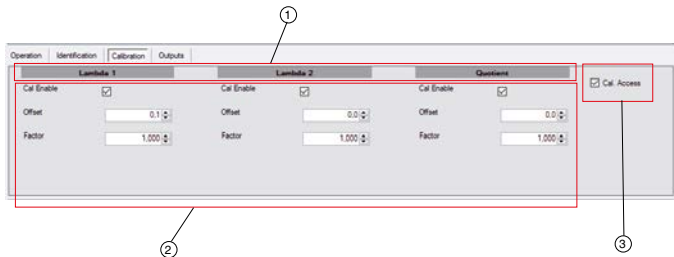
The screenshot shows the 'Identification' tab in the software. It features a 'Device tag' input field and a section for displaying device-specific information, including serial number, hardware revision, and firmware revision.

EN

1	Device tag	Entering a device name
2	Device-specific information	Display of device-specific internal information

Under the category Identification there is the possibility to assign a name to this pyrometer in the field Device tag.

## Category Calibration



1	Header with information of the available measuring channels	Display of the available measuring channels of the pyrometer
2	Calibration parameters	Entering or activating the calibration parameters
3	Calibration release	Activation of user calibration

In the Calibration tab you can parameterize the Offset and Slope parameters or activate the User Calibration. Which influence the parameters Offset and Factor have can be found in the chapter Fundamentals of Calibration.



## Category Outputs



EN

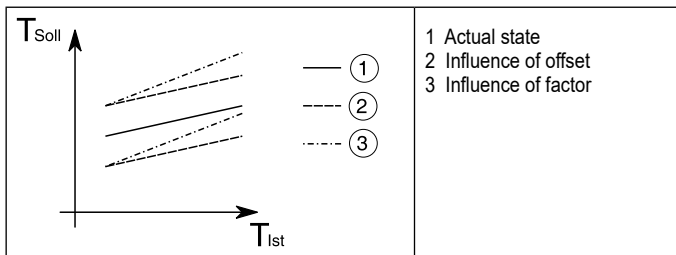
1	Header with information about the available outputs	Display of available outputs
2	Parameterization	Parameterization of the outputs of the connected PX pyrometer

## 6 Basics of calibration

Calibration is carried out at two temperatures. The **offset** is set at the beginning of the measuring range and the **slope factor** of the calibration curve is set at the end of the measuring range.

The **offset** causes a parallel shifting of the calibration curve. It must be used to set the lower calibration point. **The factor** changes the slope of the calibration curve. This is set to adjust the upper calibration temperature.

The temperatures in the middle of the range are automatically influenced by changes.



## 7 Performing a calibration

- ▶ Check the optics of the pyrometer on pollution.
- ▶ Focus the optics and mount the pyrometer axially in relation to the bottom of the calibration kiln.
- ▶ Check the set parameters. If an extreme value memory or smoothing is set, these must be deactivated.



Make a note of the set parameters and adjust them again after calibration.

- ▶ Activate the user calibration in the Calibration dialog, select the User Calibration "Approx. Access".
- ▶ Activate via "Cal. Enable" the measuring channel for which the calibration is to be carried out.
- ▶ Adjust the temperature via the offset at the beginning of the measuring range.
- ▶ Adjust the temperature via the factor at the end of the measuring range.



Since the parameters influence each other, it should be checked once more at the end and at the beginning of the operating temperature range, after changes have been made.

Copyright prohibits the reproduction or distribution of this instruction manual, including text, photographs or images contained herein, in whole or in part, for any purpose whatsoever, without prior consent of the author. This applies to any form of mechanical or electronic reproduction as well as to electronic transmission in any form through any medium.

**Please note:**

Unless otherwise stated in this instruction manual, the instruments described herein are subject to change without prior notice, particularly modifications for the sake of technological advancement.

© 2022 KELLER HCW GmbH  
Carl-Keller-Straße 2-10  
D-49479 Ibbenbüren-Laggenbeck  
Germany  
[www.keller.de/its](http://www.keller.de/its)

