

 **IO-Link**



PYROMETER

CellaTemp®

PK / PKF / PKL xx

Pyrometer

CellaTemp PK/PKF/PKL xx

Quick start guide

General

This guide gives you the minimum information to properly install the pyrometers of the PK series. For detailed information please refer to the user guide CellaTemp PK. You can download it under the following link:

<https://www.keller.de/en/its/mediacenter/manuals.htm>

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.

Laser safety instructions for the laserpointer

Class 2 Laser Product

- Never look directly into the laser beam path (emitted power <1.0 mW at a wavelength of 630-670 nm)
- Do not leave the instrument unattended when the laser is activated.
- Do not point the laser beam at any person.
- During pyrometer installation and alignment, make sure to avoid the possibility of laser light reflections caused by reflective surfaces.
- All currently valid laser safety standards must be observed.
- Do not dismantle the laserpointer.

Note the laser warning label on the laserpointer.

The black and yellow laser warning label is affixed on the laserpointer.

Fitting

- The pyrometer should be mounted, where it is not unnecessarily exposed to smoke, heat or steam. Contamination of the lens leads to a lower display of the measuring value. Therefore make sure, that the lens is always clean. The field of view of the pyrometer must remain free. Any interference by objects can cause measurement errors.
-

- The pyrometer should be installed at 90 ° to the measurement object, if possible. The angle should not be less than 45 ° from the vertical.

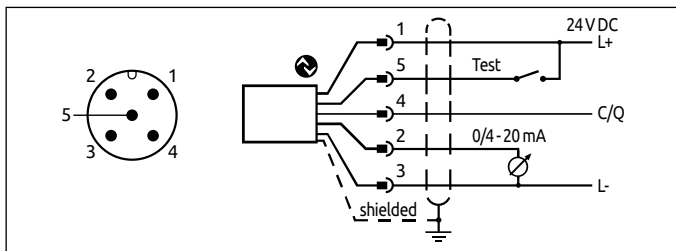
- EN** • The spot must be completely filled by the measured object.

Electrical connection

The pyrometer is supplied with low voltage 24V DC (18 ... 32V DC).

▲ ATTENTION The pyrometer may only be installed by a skilled, qualified electrician. Do not connect the instrument while the voltage supply source is turned on. Please observe international safety regulations at all times.

- ▶ Switch to neutral and verify absence of voltage
- ▶ Connect the instrument according to the following schematic:



Pin 1	BN (brown)	L+ (Power supply 24V DC)
Pin 5	GY (grey)	Test Input
Pin 2	WH (white)	Analogue output; 0/4 ... 20mA
Pin 4	BK (black)	Open Collector switching output; $I_{max} = 150 \text{ mA}$ or IO-Link
Pin 3	BU (blue)	L- (Shield)

! The pyrometer must be protected against high voltage and strong electromagnetic fields. Use a shielded cable. The shield must be connected with the connector housing.

! Use a flyback diode when switching inductive loads.

! If the test function is not used:

- ▶ Connect the test input (pin 5) to the negative supply.
- ▶ Alternatively, use 4-pole cable socket with pin 5 not assigned.

Installation

1. Select a suitable location for the pyrometer. The following criteria must be observed:
 - The lens and the field of view of the pyrometer must be free of dirt, smoke and steam. Otherwise, the air purge PS 01/A must be installed to protect the pyrometer from contamination.
 - The permissible operating temperature is 0 - 65 ° C. At a temperature above 65 ° C, the cooling jacket PK 01/B AF1 must be used. As cooling medium, air or water are possible.
2. Check that the lens is clean. Assemble the pyrometer in the provided bracket and align the pyrometer to the measuring object. If necessary, check the cooling medium and the maximum operating temperature.
3. Turn on the power supply of the pyrometer. If the pyrometer features an LED pilot light, this can be used to align the pyrometer. For pyrometers with fibre optics, the measuring head must be focussed. For that, the laserpointer is to be connected to the fibre optic and to be activated by using a button. Follow the safety instructions. For focal adjustment, loosen the screw of the measuring head and move the inner tube in order to obtain a sharp spot on the measuring area. For a correct measuring, focus the measuring head until the spot light is shown as a sharp round laser spot in the target area.
4. The pyrometer uses the intensity of infrared radiation for non-contact temperature measurements. It is necessary to configure the pyrometer to the respective emissivity coefficient of the measuring object to obtain exact measuring results (see manual PK, chapter 16). The emissivity coefficient is set as follows:
 - ▶ Press [▲ or ▼]
 - ▶ Press [▲ or ▼] until the desired emissivity is shown
 - ▶ Press [Enter] or wait for 3 seconds

> The current temperature value is displayed and the new emissivity coefficient is stored. Make sure that the function of the pyrometer is correct. All parameters can be set directly at the pyrometer (see manual, chapter 5).
5. It is advisable to take the checking of the pyrometer in the maintenance plan.

! The pyrometers of the PK 1x series are only measuring exact results in the state of thermal stabilization. The break-in period is approximately 10 minutes after starting the supply voltage.

IO-Link

This device has an IO-Link communication interface, which requires an IO-Link-capable module (IO-Link master) for operation. The IO-Link interface allows direct access to process and diagnostic data and offers the possibility to parameterize the device during operation.

The IODDs required for configuring the IO-Link device as well as detailed information on process data set-up, diagnostic functions and parameter addresses are available in the download area at www.keller.de/its/pyrometer.

! A 3-wire cable port Class A (Type A) must be used for IO-Link operation.

Shipping, packaging and disposal

Inspection after shipping

EN

Unpack and inspect the entire shipment immediately upon receipt to make sure it is complete and undamaged. If the container/package shows visible signs of damage, please refuse the shipment. If this is not possible, accept the shipment on the condition that the freight carrier's delivery record is noted with the extent of the damage in order to file a claim. Should you discover a concealed loss or damage, report it to the shipper or freight carrier immediately. If the period for filing claims has expired, you will no longer be able to make any claims for compensation of damage or loss.

Packaging

The packages used are made of carefully selected, environmentally compatible materials and are thus recyclable. Please ensure that they are disposed of in an ecologically sound manner.



Disposal of the old devices

Old electrical and electronic devices frequently still contain valuable materials.

These devices can be returned for disposal to the manufacturer or they must be disposed properly by the user.

For the improper disposal of the device by the user, the company KELLER is not responsible.

 **IO-Link** is a registered trademark of the IO-Link corporate community.



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.