



by **KELLER**
Infrared
temperature
sensors
ITS

 **IO-Link**



PYROMETER

CellaTemp[®]

PX 1x, 2x, 3x

Ident no.: 1117997

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QUICK GUIDE

Pyrometer

CellaTemp PX 1x, 2x, 3x

Quick start guide

General

This guide gives you the minimum information to properly install the pyrometers of the PX series. For detailed information please refer to the user guide CellaTemp PX. 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

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.

Laser Warning Label

The black and yellow laser warning label is affixed next to the nameplate of the instrument. An arrow indicates the laser emission path (lens opening).

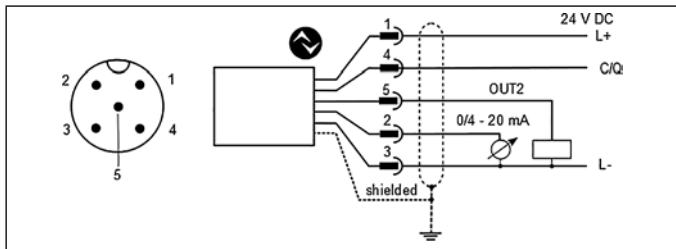
Electrical connection

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:

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

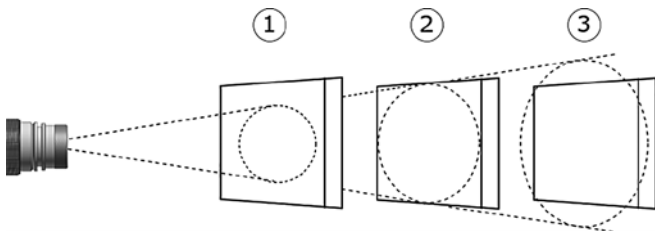
! The pyrometer must be protected against high voltage and strong electromagnetic fields. Use a shielded cable. The shield must be connected with the connector housing.

! Use a flyback diode when switching inductive loads.

Installation

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.

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, an air purge must be installed to protect the pyrometer from contamination.
 - The permissible operating temperature is 0 - 65 °C. At temperatures above 65 °C, a cooling jacket 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. The pyrometer should be preferably installed at 90° to the measured object. The angle should not be less than 45° from the vertical. The spot must be completely filled by the measured object.



1	Best – target larger than the spot size
2	Good – target equal to the spot size
3	Incorrect – target smaller than the spot size

- Turn on the power supply of the pyrometer.
- Focus the pyrometer

Pyrometer with through-lens sighting:

Focus the lens until the target and the target marker (distinctly marked circled spot in the viewfinder) are both clearly visible.

Pyrometer with laser sighting:

Activate the laser spot light by pressing the mode button for 3 s. Observe the laser safety instruction. Focus the lens until a clear and round laser point is visible.

Pyrometer with camera

When aiming the pyrometer, focus the sensing head until the video images is sharp.

Pyrometer with fiber optic cable and separate optic

For pyrometers with fiber optics, the measuring head must be focused. To activate the laser, press the MODE button on the rear panel for 2 s. Observe the laser safety instruction. 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.

- 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 the exact measuring results. The emissivity coefficient is to set as following:
 - ▶ Press [▲ or ▼] until the desired emissivity is shown.
 - ▶ Release [▲ or ▼]
 - > 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. Record the setted parameters.

- It is advisable to integrate this pyrometer check into the maintenance plan.



The pyrometers of the PX 1x series are only measuring exactly in state of terminal stabilization. The breakperiod is approximately 15 min after starting the supply voltage.

IO-Link

EN

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 parametrize the device during operation.

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



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

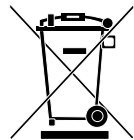
Shipping, packing and disposal

Inspection after shipping

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 carriers' 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.

Packing

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 device

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 HCW is not responsible.



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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.