PRECISION PYRO PYROMETERS by KELLER ITS infrared temperature solutions

PYROMETER
CellaTemp®
PX 4x, 5x, 6x

QUICK GUIDE

Ident no.: 1117998 05/2022

Pyrometer CellaTemp PX 4x, 5x, 6x

EN

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.

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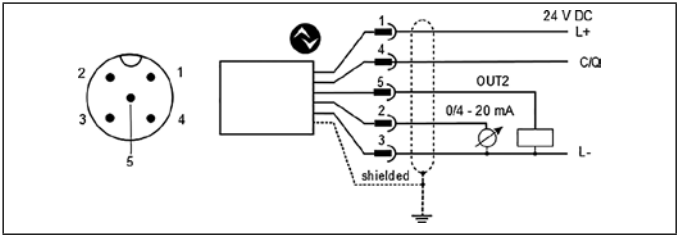
- ► Switch to neutral and verify absence of voltage
- ► Connect the instrument according to the following schematic:



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

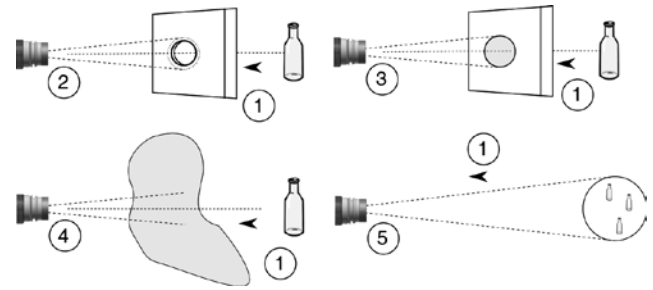
The pyrometer must be protected against high voltage and strong electromagnetic fields. Use a shielded cable. The shield must be connected with the connector housing.

Use a flyback diode when switching inductive loads.

Installation

Install the pyrometer in a location where it will not be unnecessarily exposed to smoke, ambient heat or water vapour.

1. Select a suitable location for the pyrometer. The following criteria must be observed:
   - If the installation site is not free from dirt, smoke and water vapour, install an axial air nozzle to protect the lens from contamination.
   - The permissible operating temperature is 0 – 65 ° C. At temperatures above 65 °C, a cooling jacked must be used. As cooling medium, air and 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 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.
4. When measuring with a two-colour pyrometer, the field of view does not have to be filled entirely by the target object. There might even be particles like dust, steam and smoke in the viewing path that weaken the infrared radiation.



1	Emitted radiation
2	Sighting hole smaller than the field of view
3	Dirty lens or sighting window
4	Dust, steam and smoke in the atmosphere
5	Target smaller than the field of view and/or moves

5. Turn on the power supply of the pyrometer.
6. Focus the pyrometer

   Pyrometer with through-lens sighting:
   Focus the lens until target and target marker (through-lens-sighting) are both clearly visible.

   Pyrometer with laser sighting:
   Activate the lase spot light by pressing the mode key for 2 seconds. Observe the safety instruction. Focus the lens until a clear round laser point is visible.

   Pyrometer with camera
   When aiming the pyrometer, focus the sensing head until the video image is sharp.

   Pyrometer with fiber optic cable and separate optic
   For pyrometer 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 instructions. For focal adjustment, loosen the screw of the measuring head and move the inner tube to obtain a sharp spot in the measuring area.
7. The two-color pyrometer detects the infrared radiation of the target object on two wavelengths. The temperature is then defined by the ratio of the two signals. The emissivity, i.e. the radiation characteristics of the target may change due the nature of the surface or in relation to the temperature, but with simultaneous changes over both wavelengths there is no influence of the measurement.

   ! Changing the emissivity ratio can compensate for the difference between measured temperature and true temperature when selective interfering factors or material-related different emissivities are affecting Lambda 1 and Lambda 2.

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8. The emissivity ratio is to set as following:
   ► Press [▲or ▼] until the desired emissivity ratio is shown.
   ► Release [▲or ▼]
   > The current temperature value is displayed and the new emissivity ratio 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.
9. It is advisable to integrate this pyrometer check into the maintenance plan.

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 parametrize the device during operation.

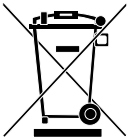
The required IODDs to configure the IO-Link device as well as detailed information on process data setup, diagnostic functions and parameter addresses are available at the download area at www.keller.de/en/its/pyrometers/.

! 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.

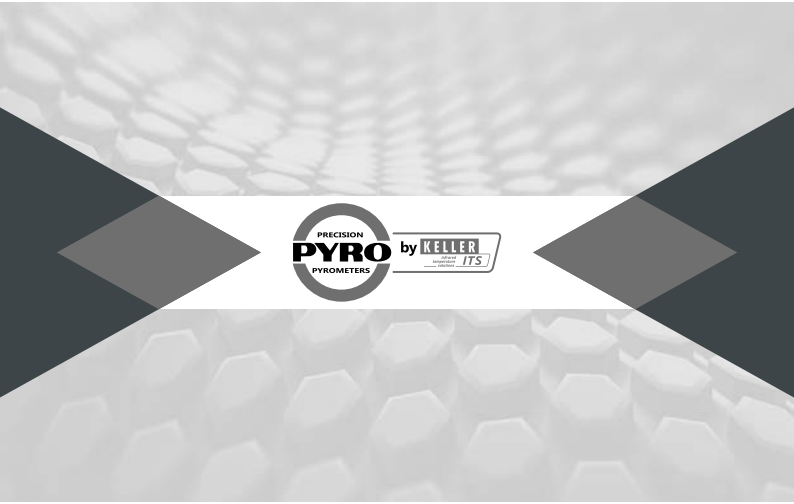
Packing
The packages used are made of carefully selected, environmentally compatible materials and are thus recyclable. Please ensure that they are disposed of in an ecologically sound manner.



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.



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.

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