

CellaTemp[®] PA 13

Multifunctional Pyrometer



Temperature detection in industrial furnaces, incinerators and heat treating systems

- Temperature range: 600 to 1600 °C
- Measurement through flames and combustion gases
- Focusable interchangeable optics
- Target sighting: through-the-lens or laser
- 2 current output signals and 2 gate inputs/outputs, freely configurable
- Correction for reflected ambient radiation
- Large LED display



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CellaTemp PA 13 is a special pyrometer for temperature detection of objects in flame-heated furnaces. Because PA 13 works at a narrow spectral range of 3.8 – 4.0 µm, water vapour and CO₂ in the detector's field of view will not influence the measurement, even at greater target distances. The spectral sensitivity of this model enables highly accurate and reliable measurements through flames and combustion gases. This pyrometer can also tackle other atmospheric challenges such as reducing the effect of background radiation within continuous annealing furnaces.

CellaTemp PA features a technique to compensate for reflected ambient radiation: one of the signal outputs can be configured as an input, e.g. to apply the furnace chamber temperature—detected by a thermocouple or another pyrometer—as a correction factor to CellaTemp PA's temperature readings.

CellaTemp PA features two analogue outputs. The user can define the measurands of the outputs. Two switching outputs also provide a variety of combination possibilities and can be used as gate inputs.

The optical system is infinitely adjustable to the distance of the target, enabling precise focusing. CellaTemp PA can be supplied with either through-the-lens sighting or a laser spot light for target sighting.

CellaTemp PA's user-friendly keypad and LED display panel simplify operation and configuration. Temperature readings are easy to read from a distance of several meters. Parameters can be set directly using the push-buttons or via USB interface from a PC. Because of its integrated software, CellaTemp PA can communicate with all commonly used Windows operating systems, regardless of language. Additionally, a network-compatible RS 485 interface is available.

Temperature range:

600 - 1600 °C

Sensor:

Photodiode

Spectral sensitivity:

3.8 - 4.0 µm

Focusing range:

600 mm to ∞

Distance to target size ratio:

35 : 1

Sighting:

Through-the-lens sighting or laser spot light

2 Analogue outputs:

0(4) - 20 mA linear, switchable, scaleable configuration option: 0-10 V voltage input

Load:

max. 500 Ω

2 Switching inputs / outputs

Open Collector 24 V, ≤ 30 mA highly versatile

Data communication:

- USB
- RS 485 (integrated menu-driven user interface to set parameters and transmit data to a PC)

Response time t_{98} :

- ≤ 100 ms ($T > 250$ °C)
- ≤ 2 ms ($T > 750$ °C)

Resolution

Current output:

0.2 K + 0.03 % of selected range

Temperature reading:

1 K

USB / RS 485:

0.1 K in terminal mode

Measurement uncertainty:

1 % of temp. reading, at least 2 K (at $\varepsilon = 1$ and $T_a = +23$ °C)

Repeatability:

2 K

Temperature coefficient:

≤ 0.1 K/K ($T < 250$ °C)
 ≤ 0.04 %/K ($T > 250$ °C)
 of temp. reading [°C]
 (deviation to 23 °C)

LED display:

4-digit (digit height 8 mm)

Power requirement:

24 V DC +10% / -20%
 Current input ≤ 135 mA
 (150 mA with laser sighting)
 Ripple ≤ 200 mV

Permissible humidity:

95 % RH max.
 (non-condensing)

Ambient temperature:

0 - 65 °C (without cooling)

Storage temperature:

-20 - +80 °C

Dimensions:

Ø 65 x 220 mm (incl. connector)

Housing material:

Stainless steel

Protection:

IP65 according to DIN 40050

Adjustable Parameters

- Measuring range
- Current range and voltage range for analogue inputs and outputs
- Smoothing function
- Min/Max (peak picker)
- Simulation of current and temperature for diagnostics
- Emissivity
- Transmission factor
- Correction feature
- Data storage mode
- Alarm contacts

Accessories

- Air purge PZ 20/A
- Protection jacket PA 40/B
- Cooling jacket PA 20/B
- Mounting bracket PA 11/U
- Mounting bracket, adjustable PA 11/K
- Calibration certificate according to DIN ISO 9001

Subject to technical modifications without notice
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