

CellaTemp[®] PA 20

Multifunctional Pyrometer



- Wide measuring range: 250 to 2000 °C
- 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
- Multiple configuration options for superior versatility
- Large LED display
- USB and bus interface



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CellaTemp PA is based on the modular concept of its functions—optics, sensor, signal processing, operating controls and data output. The versatile components can be combined in many ways, resulting in 25 different versions to choose from. With CellaTemp PA, KELLER HCW has implemented the idea of a custom-configured instrument, individually adapted to the requirements of a specific application.

CellaTemp PA features two analogue outputs. The user can define the measurands of the outputs. Alternatively, one of the signal outputs can be configured as an input, e.g. to apply the furnace temperature as a correction factor to the temperature reading. Two switching outputs also provide a variety of combination possibilities and can be used as gate inputs.

Aside from standard parameters such as emissivity, analogue current range and signal smoothing, CellaTemp PA features a number of new parameter settings. The pyrometer can be custom configured with an error correction curve. The transmittance of the protective lenses or compensation for reflected ambient radiation is factored into the calculated temperature reading. Another new optional feature is automatic temperature detection in discontinuous processes.

Four interchangeable lenses are available for maximum versatility in regard to target spot size and distance ratio. These optical systems are infinitely adjustable, enabling precise targeting for distances ranging from a few millimeters up to several meters. Even spot diameters as small as 0.3 mm can be achieved with a high degree of precision. The 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:

250 - 2000 °C

Sensor:

Photodiode

Spectral sensitivity:

8 - 14 µm

Focusing range:

Standard lens: 400 mm to ∞
Close-up lens: 200 - 400 mm
Telephoto lens: 1200 mm to ∞
Wide-angle lens: 200 mm to ∞

Distance to target size ratio:

Standard lens: 175 : 1
Close-up lens: 150 : 1
Telephoto lens: 275 : 1
Wide-angle lens: 40 : 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} :

≤ 50 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:

0.3 % of temp. reading, at least 4 K (at $\varepsilon = 1$ and $T_a = +23$ °C)

Repeatability:

1 K

Temperature coefficient:

≤ 0.25 K/K (T < 500 °C)
≤ 0.05 %/K (T > 500 °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