

Precise non-contact temperature measurement from $-40\text{ }^{\circ}\text{C}$ to $975\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$ to $1787\text{ }^{\circ}\text{F}$) in rough environmental conditions



Features:

- The new infrared thermometer for hot environmental temperatures up to $250\text{ }^{\circ}\text{C}$ ($482\text{ }^{\circ}\text{F}$) without any need of cooling
- A variety of applications in dryers, ovens, heat treatment lines in the metal and glass industry, paper, plastic and textile manufacturing and semiconductor processing in the temperature range of $-40\text{ }^{\circ}\text{C}$ to $975\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F}$ to $1787\text{ }^{\circ}\text{F}$) and a response time up from 100 ms
- Selectable 10:1 or 2:1 optics, compact sensor head size
- Narrow beam optics allows oblique aiming to avoid material thickness dependent temperature readings
- Monitor box for programming and temperature display
- Analog outputs 0/4–20 mA, 0–5/10 V, thermocouple type K or J and integrated digital interfaces (optional) Profibus DP, USB, RS232, RS485 or CAN

Measurement specifications

Temperature range (scalable via programming keys or software)	$-40\text{ }^{\circ}\text{C} \dots 975\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F} \dots 1787\text{ }^{\circ}\text{F}$)
Spectral range	8–14 μm
Optical resolution (90% energy)	10:1 2:1
System accuracy ²⁾ (at ambient temp. $23 \pm 5\text{ }^{\circ}\text{C}$) ($23 \pm 41\text{ }^{\circ}\text{F}$)	$\pm 1\text{ }^{\circ}\text{C}$ or $\pm 1.5\text{ }^{\circ}\text{C}^{1)}$ ($\pm 1\text{ }^{\circ}\text{F}$ or $\pm 2.7\text{ }^{\circ}\text{F}^{1)}$)
Repeatability ²⁾ (at ambient temp. $23 \pm 5\text{ }^{\circ}\text{C}$) ($23 \pm 0.5\text{ }^{\circ}\text{F}$)	$\pm 0.5\text{ }^{\circ}\text{C}$ or $\pm 0.5\text{ }^{\circ}\text{C}^{1)}$ ($\pm 0.5\text{ }^{\circ}\text{F}$ or $\pm 0.9\text{ }^{\circ}\text{F}^{1)}$)
Temperature resolution (NETD)	0.25 K
Response time	100 ms
Emissivity/ Gain (adjustable via programming keys or software)	0.100–1.100
Transmissivity/ Gain (adjustable via programming keys or software)	0.100–1.100
Signal processing (parameter adjustable via programming keys or software, respectively)	Peak hold, valley hold, average; extended hold function with threshold and hysteresis
Software	optris® Compact Connect

¹⁾ Whichever is greater with dynamic noise compression

²⁾ At object temperatures $\geq 20\text{ }^{\circ}\text{C}$ ($\geq 68\text{ }^{\circ}\text{F}$)

General specifications

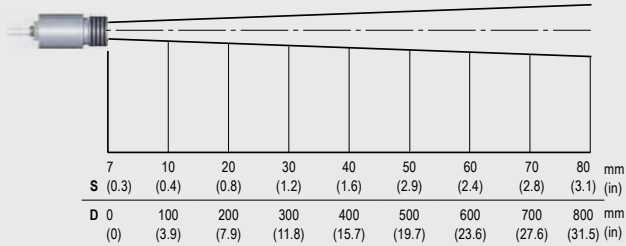
Environmental rating	IP 65 (NEMA-4)
Ambient temperature	$-20\text{ }^{\circ}\text{C} \dots 250\text{ }^{\circ}\text{C}$ ($-4\text{ }^{\circ}\text{F} \dots 482\text{ }^{\circ}\text{F}$) (sensing head) $0\text{ }^{\circ}\text{C} \dots 85\text{ }^{\circ}\text{C}$ ($32\text{ }^{\circ}\text{F} \dots 185\text{ }^{\circ}\text{F}$) (electronics)
Storage temperature	$-40\text{ }^{\circ}\text{C} \dots 250\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F} \dots 482\text{ }^{\circ}\text{F}$) (sensing head) $-40\text{ }^{\circ}\text{C} \dots 85\text{ }^{\circ}\text{C}$ ($-40\text{ }^{\circ}\text{F} \dots 185\text{ }^{\circ}\text{F}$) (electronics)
Relative humidity	10–95%, non condensing
Vibration (sensor)	IEC 68-2-6: 3 G, 11–200 Hz, any axis
Shock (sensor)	IEC 68-2-27: 50 G, 11 ms, any axis
Weight	40 g (1.4 oz) (sensing head) / 420 g (14.8 oz) (electronics)

Electrical Specifications

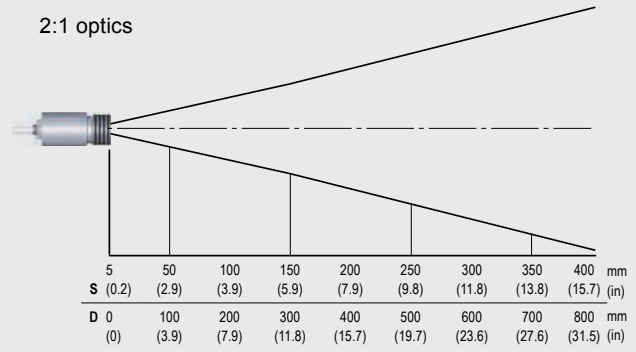
Outputs / analog	Channel 1: 0/4–20 mA, 0–5/ 10 V, thermocouple J,K Channel 2: sensing head temperature ($-40\text{ }^{\circ}\text{C} \dots 250\text{ }^{\circ}\text{C}$ [$-40\text{ }^{\circ}\text{F} \dots 482\text{ }^{\circ}\text{F}$] as 0–5 V or 0–10 V), alarm output
Output / alarm	24 V / 50 mA (open collector)
Optional	Relay: 2 x 60 V DC/ 42 V AC _{eff.} ; 0.4 A; optically isolated
Outputs / digital	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
Output impedances	mA max. 500 Ω (with 8–36 V DC) mV min. 100 k Ω load impedance, thermocouple 20 Ω
Inputs	Programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	3 m (standard), 8 m, 15 m 9.8 ft [standard], 26.2 ft, 49.2 ft)
Power Supply	8–36 V DC
Current draw	Max. 100 mA

Optical specifications

10:1 optics

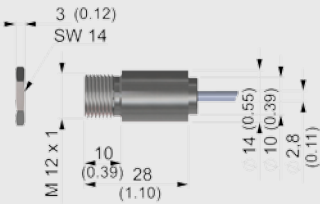


2:1 optics

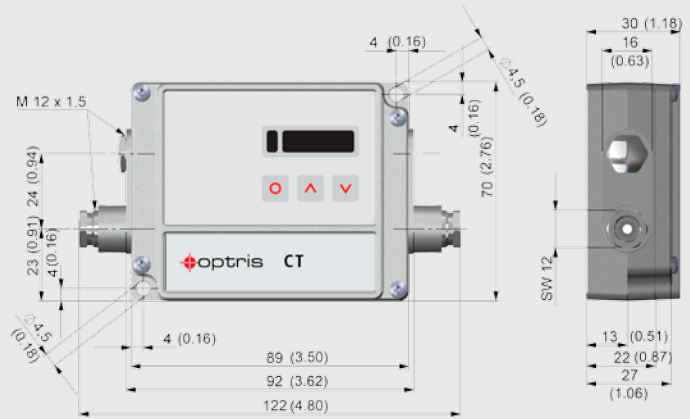


Dimensions

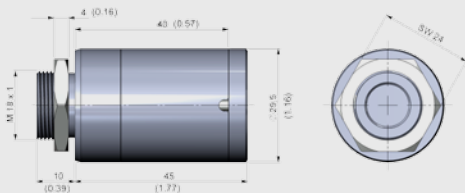
Sensing head (standard)



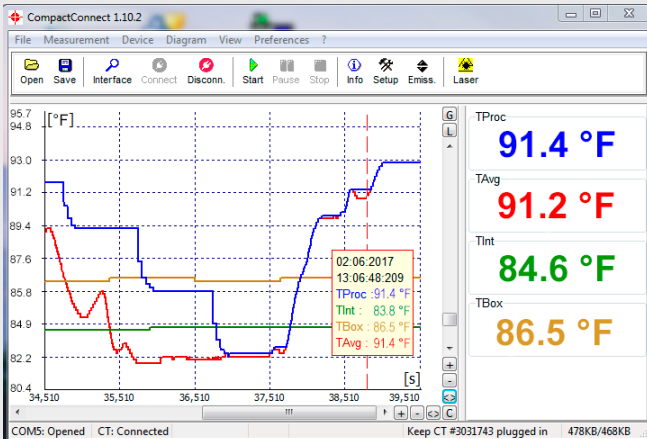
Electronics



Dimensions massive housing incl. sensing head



Compact Connect software



- Software for easy sensor setup and remote controlling, supports multi tasking
- Graphic display for temperature trends and automatic data logging for analysis and documentation with 1 ms response time
- Adjustment of signal processing functions and programming of outputs and functional inputs of the sensor
- Automatic emissivity adjustment
- The software CompactConnect allows to customize the sensor to application needs of the user