

Non-contact temperature measurement of CO₂ and CO flame gases up to 1650 °C

Features:

- Accurate temperature measurement of CO₂ (F2) or CO (F6) flame gases in the range of 200 °C up to 1650 °C in combustion processes, garbage burning or processes inside chemical reactors
- Double laser aiming marks real spot location and spot size up from 1.6 mm at any distance
- Optics 45:1 with selectable focus, compact sensor head size
- Usable up to 85 °C ambient temperature without cooling and automatic laser switch off at 50 °C
- Cooling and protection accessories for harsh environmental conditions
- Calibrated under inert gas atmosphere (Argon)



General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	-20 ... 85 °C (sensing head, 50 °C with laser ON) -20 ... 85 °C (electronics)
Storage temperature	-40 ... 85 °C (sensing head) -40 ... 85 °C (electronics)
Relative humidity	10–95 %, non condensing
Vibration (sensor)	IEC 60068-2-6 (sinus shaped) IEC 60068-2-64 (broadband noise)
Shock (sensor)	IEC 60068-2-27 (25G and 50G)
Weight	600 g (sensing head) / 420 g (electronics)

Electrical specifications

Outputs / analog	0/4–20 mA, 0–5/ 10 V, thermocouple J, K
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 (at 8–36 V DC) mV min. 100 kΩ Lastwiderstand 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
Power Supply	8–36 V DC
Current draw	max. 160 mA
Visor laser 635 nm	1 mW, ON/OFF via electronic box or software

Measurement specifications

Temperature range (scalable via programming keys or software)	200 ... 1450 °C (F2/F6) 400 ... 1650 °C (F2H/F6H)
Spectral range	4.24 μm (F2) 4.64 μm (F6)
Optical resolution (90 % energy)	45:1
System accuracy (at ambient temp. 23 ±5 °C)	±1 % ^{1) 2)}
Repeatability (at ambient temp. 23 ±5 °C)	±0.5 % or +0.5 °C ²⁾
Temperature resolution	0.1 K
Exposure time ³⁾ (90 % signal)	10 ms
Emissivity / Gain (scalable via programming keys or software)	0.100–1.100
Transmissivity (scalable 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⁾ At ambient temperatures >300 °C

²⁾ $\epsilon = 1$, response time 1 s

³⁾ With dynamic adaptation at low signal levels

