

Precise non-contact temperature measurement from -50 °C to 975 °C

Features:

- One of the smallest infrared sensors worldwide with extrem short response time down to 6 ms (90 % signal)
- Fast analog output (0/4–20 mA, 0–5/10 V) with smart real time data processing
- Instant digital 0/10 V output with a response time of 4 ms (50 % signal)
- Continuous process monitoring with an unchoppered sensor system
Note: Conventional fast pyroelectrical infrared sensors with mechanical chopper see processes only part of the time
- Easy to assemble in multiple arrays for line scanning of small and fast objects (hot spot detection) using a RS485 bus communication
- Rugged up to 120 °C ambient temperature without cooling



General specifications

Environmental rating	IP 65 (NEMA-4)
Ambient temperature	Sensing head: -20 °C ... 120 °C Electronics: 0 °C ... 85 °C
Storage temperature	Sensing head: -40 °C ... 120 °C Electronics: -40 °C ... 85 °C
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	Sensing head: 40 g / electronics: 420 g

Electrical specifications

Output/analog	0/4–20 mA, 0–5/ 10 V or thermocouple J, K
Alarm output	Open-collector (24 V/ 50 mA)
Output/digital	0/10 V (10 mA) optional: relay: 2 x 60 V DC/ 42 V AC; 0.4 A; optically isolated
Digital interface	USB, RS232, RS485, CAN, Profibus DP, Ethernet (optional)
Output impedances	mA max. 500 Ω (with 8–36 V DC) mV min. 100 kΩ load impedance thermocouple 20 Ω
Inputs	Programmable functional inputs for external emissivity adjustment, ambient temperature compensation, trigger (reset of hold functions)
Cable length	1 m (standard), 3 m, 8 m, 15 m
Power supply	8–36 V DC
Current draw	max. 100 mA

Measurement specifications

Temperature range (scalable via programming keys or software)	-50 °C ... 975 °C
Spectral range	8–14 μm
Optical resolution (90 % energy)	LT15F 15:1 LT25F 25:1
System accuracy (at ambient temperature 23 ±5 °C)	±1 % or ±2 °C ^{1), 2)}
Repeatability (at ambient temperature 23 ±5 °C)	±0.75 % or ±0.75 °C ^{1), 2)}
Temperature resolution (NETD)	LT15F 0.2 K ^{2), 3)} LT25F 0.4 K ^{2), 3)}
Response time	Analog output (90 %) LT15F 9 ms LT25F 6 ms Digital output (50 %) LT15F 4 ms LT25F 3 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 ≥20 °C

³⁾ At time constant 100 ms with smart averaging and T_{obj} 25 °C

