

**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<br>Electronics: 0 °C ... 85 °C   |
| Storage temperature  | Sensing head: -40 °C ... 120 °C<br>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)<br>optional: relay: 2 x 60 V DC/ 42 V AC;<br>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)<br>mV min. 100 kΩ load impedance<br>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<br>LT25F 25:1  |
| System accuracy (at ambient temperature 23 ±5 °C)                                       | ±1 % or ±2 °C <sup>1), 2)</sup>   |
| Repeatability (at ambient temperature 23 ±5 °C)   | ±0.75 % or ±0.75 °C <sup>1), 2)</sup>   |
| Temperature resolution (NETD)   | LT15F 0.2 K <sup>2), 3)</sup><br>LT25F 0.4 K <sup>2), 3)</sup>  |
| Response time   | Analog output (90 %)<br>LT15F 9 ms<br>LT25F 6 ms<br><br>Digital output (50 %)<br>LT15F 4 ms<br>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   |

<sup>1)</sup> Whichever is greater with dynamic noise compression

<sup>2)</sup> At object temperatures ≥20 °C

<sup>3)</sup> At time constant 100 ms with smart averaging and T<sub>obj</sub> 25 °C

