

More Precision.



optris® CTfast

Precise noncontact temperature measurement
from -40 to 600°C



FEATURES

- One of the smallest infrared sensors worldwide with exposure times between 3 ms (50 % signal) and 9 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 unchopped 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 130°C ambient temperature without cooling

General specifications

| | |
|----------------------|--|
| Environmental rating | IP 65 (NEMA-4) |
| Ambient temperature | sensing head: -20 - 130°C electronics: 0 - 65°C |
| Storage temperature | sensing head: -40 - 130°C electronics: -40 - 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

| | |
|------------------------------|--|
| Analog output | 0/4 - 20 mA, 0 - 5/10 V or thermocouple J, K |
| Digital output | 0/10 V (10 mA) optional: relay: 2 x 60 V DC/42 V AC; 0.4 A; optically isolated |
| Digital interface (optional) | USB, RS232 or RS485 |
| 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 |
| Current draw | max. 100 mA |
| Power supply | 8 - 36 V DC |

Measurement specifications

| | |
|---|---|
| Temperature range (scalable via programming keys or software) | -40 - 600°C |
| Spectral range | 8 - 14 μm |
| Optical resolution | 10:1 |
| System accuracy (at ambient temperature 23 ± 5°C) | ± 1 % or ± 1°C ¹ |
| Repeatability (at ambient temperature 23 ± 5°C) | ± 0.5 % or ± 0.5°C ¹ |
| Temperature coefficient | 0.05 % or 0.05°C/°C ^{1, 2} |
| Temperature resolution (NETD) | 0,5°C |
| Exposure time | 3 ms (50 %) 9 ms (90 %) |
| Response time | 17 ms (90 %) at analog output 4 ms (50 %) at digital output |
| 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 |
| Certificate of calibration | optional |

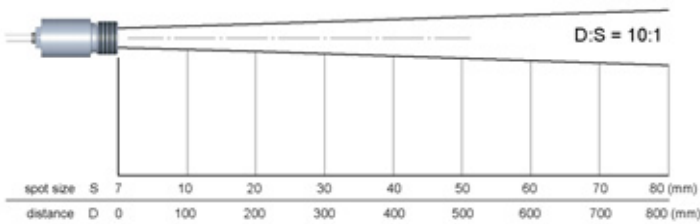
¹ whichever is greater with dynamic noise compression

² at sensing head temperature 0 - 130°C

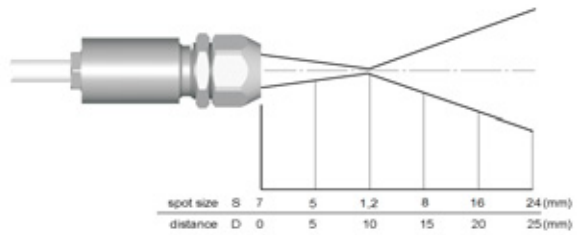
optris® CTfast

Optical specifications

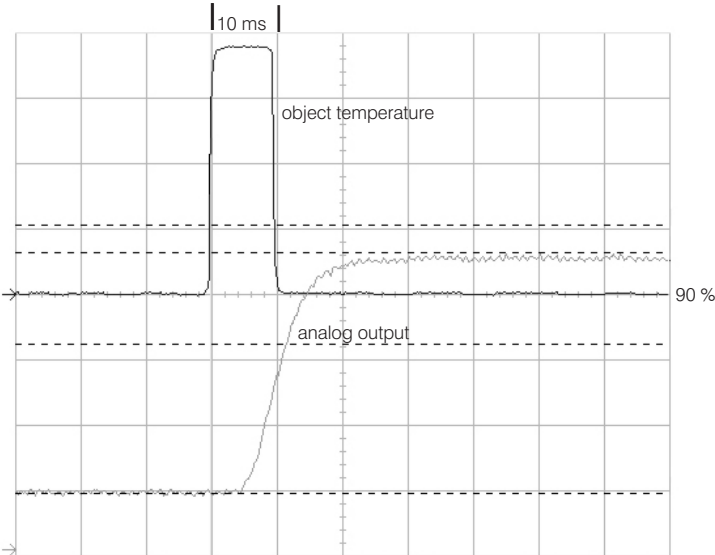
10:1 optics



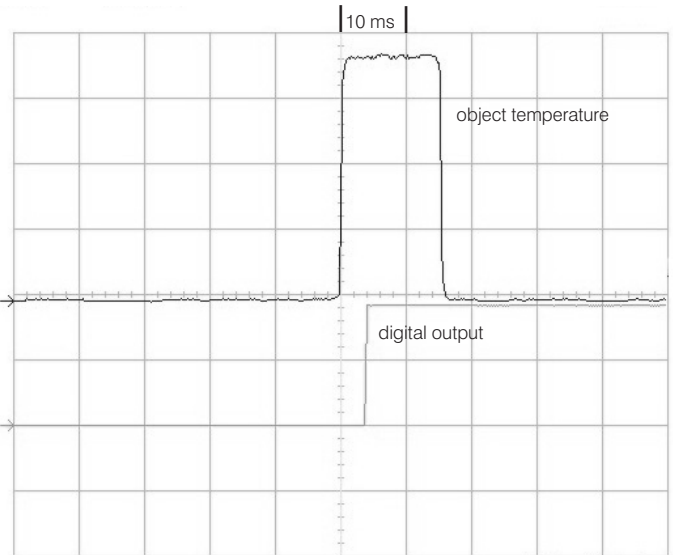
10:1 optics with CF-lens



Time constants for temperature jumps between 25°C and 180°C

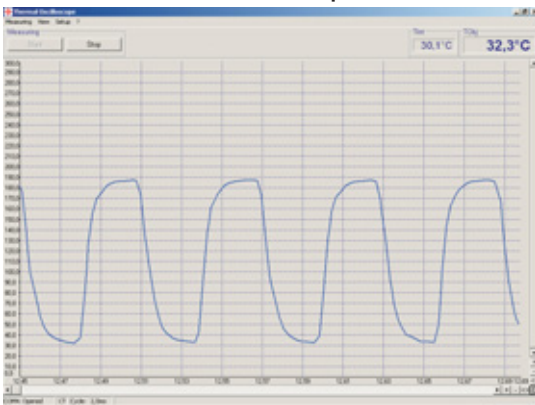


Exposure time at 90 % signal with peak hold



Digital output for 50 % energy threshold

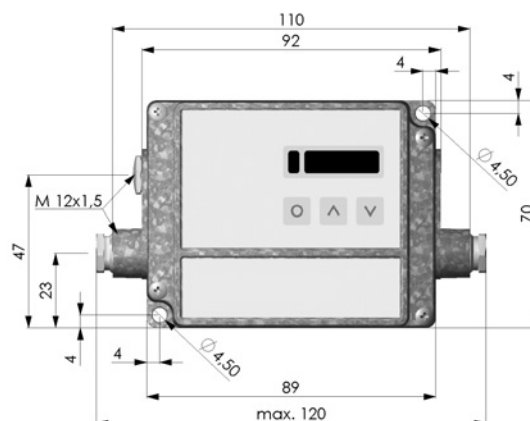
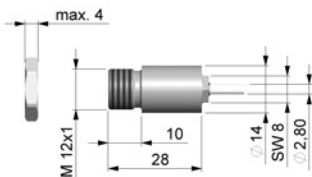
CTfast - thermal oszilloscope software



- easy sensor setup and remote controlling
- automatic data logging for analysis and documentation
- graphic display of fast temperature trends
- adjustment of extended signal processing functions
- programming of analog and digital input for external emissivity and ambient temperature compensation
- programming of alarm output (head or object temperature)
- digital remote communication of up to 32 sensors in one network

Dimensions

Sensing head



Electronics

