

Thermalert® 4.0

Datasheet



Highlights

- Wide temperature range from -40 to 2250 °C (-40 to 4082 °F)
- Multiple spectral models for any kind of application, such as metals, glass and plastics
- Best in class ambient temperature up to 85 °C (185 °F)
- Wide choice of optics
- Fast response time down to 30 ms
- Laser sighting (except LT-07, LT-15, P3)
- Compact, rugged design in stainless steel
- Galvanic isolated outputs
- Real time background temperature compensation
- Simple, two-wire installation or RS485 communication
- Software for remote configuration, monitoring and field calibration

General Specifications

| | |
|--------------------------------------|---|
| Environmental Rating | IP65 / NEMA-4 |
| Operating Ambient Temperature | |
| without cooling | -20 to 85°C (-4 to 185°F) |
| with air cooling | 120°C (248°F) |
| with water cooling | 175°C (347°F) |
| with ThermoJacket | 315°C (599°F) |
| Storage Temperature | -20 to 85°C (-4 to 185°F) |
| Relative Humidity | 10 to 95%, non-condensing |
| Dimension | 185 mm (7.2 inch) for 2 wire / 6 wire models |
| | 165 mm (6.4 inch) for 12 wire model |
| Weight | 500 g (17.6 oz) |

Measurement Specifications

| | |
|----------------------------|-------------------------------|
| Temperature Range | |
| LT-07, LT-15, LT-30 | -20 to 600°C (-4 to 1112°F) |
| LT-50, LT-70 | -40 to 1000°C (-40 to 1832°F) |
| P7-30 | 10 to 360°C (50 to 680°F) |
| G7-70 | 300 to 900°C (572 to 1652°F) |
| G5-30 | 250 to 1650°C (482 to 3002°F) |
| G5-70 | 450 to 2250°C (842 to 4082°F) |
| MT-30 | 200 to 1000°C (392 to 1832°F) |

Temperature Range

| | |
|--------------|-------------------------------|
| MT-70 | 450 to 2250°C (842 to 4082°F) |
| P3-20 | 25 to 450°C (77 to 842°F) |
| HT-60 | 500 to 2000°C (932 to 3632°F) |

Spectral Response

| | |
|--|------------|
| LT-07, LT-15, LT-30, LT-50, LT-70 | 8 to 14 µm |
| P7-30, G7-70 | 7.9 µm |
| G5-30, G5-70 | 5 µm |
| MT-30, MT-70 | 3.9 µm |
| P3-20 | 3.43 µm |
| HT-60 | 2.2 µm |

System Accuracy¹

| | |
|-------------------------|--|
| P3-20 | ±(3°C + 1% of reading) for T _{meas} > 75°C (167°F) |
| All other models | ±1% of reading or ±1.0°C (2.0°F) for T _{meas} > 0°C (32°F) |
| | for T _{meas} ≤ 0°C (32°F): ±[1.0°C + 0.1* (0°C - T _{meas})] with T _{meas} in °C ±[2.0°F + 0.1* (32°F - T _{meas})] with T _{meas} in °F |

Repeatability²

| | |
|-------------------------|--|
| P3-20 | ±1°C (2°F) or 0.5% of reading ³ |
| All other models | ±0.3°C (0.6°F) or 0.3% of reading ³ |

Response Time⁴

| | |
|--|---------------------|
| LT-50, LT-70, P7-30, G7-70, MT-30, MT-70, HT-60 | 130 ms |
| LT-07, LT-15⁵ | 150 ms |
| P3-20 | 130 ms ⁶ |
| LT-30 | 30 ms |
| G5-30, G5-70 | 60 ms |

¹ at ambient temperature 23°C ± 5°C (73°F ± 9°F), ε = 1.0, and calibration geometry

² at ambient temperature 23°C ± 5°C (73°F ± 9°F)

³ whichever is greater

⁴ 90% value

⁵ Plastic lens only

⁶ 10 s for T target < 150°C (302°F)

Optical Specifications

| Optical Resolution | D:S | Focus Distance |
|--------------------|------|----------------|
| LT-07 | 7:1 | CFO |
| LT-15 | 15:1 | SFO |
| LT-30 | 33:1 | SFO, CF1, CF2 |
| LT-50 | 50:1 | SFO, CF2 |
| LT-70 | 70:1 | SF2, CF2 |
| P7-30 | 33:1 | SFO |
| G7-70 | 70:1 | SF2 |
| G5-30 | 33:1 | SFO |
| G5-70 | 70:1 | SF2 |
| MT-30 | 33:1 | SFO, CF1, CF2 |
| MT-70 | 70:1 | SF2, CF1, CF2 |
| P3-20 | 20:1 | SF4 |
| HT-60 | 60:1 | SFO, CF1, CF2 |

Focus Distances

| | |
|-----|-----------------|
| SFO | 1520 mm (60 in) |
| SF2 | 1250 mm (49 in) |
| SF4 | 500 mm (20 in) |
| CFO | 50 mm (2 in) |
| CF1 | 76 mm (3 in) |
| CF2 | 200 mm (7.9 in) |

Electrical Specifications

Power Supply

| | |
|-------------------|---|
| 2-Wires | 12 to 24 VDC |
| 6/12-Wires | 24 VDC nominal (20 to 48 VDC), 100 mA @ 24 V |

2-Wires

| | |
|----------------|----------------------|
| Analog | 4 to 20 mA |
| Digital | USB (for setup only) |

6-Wires

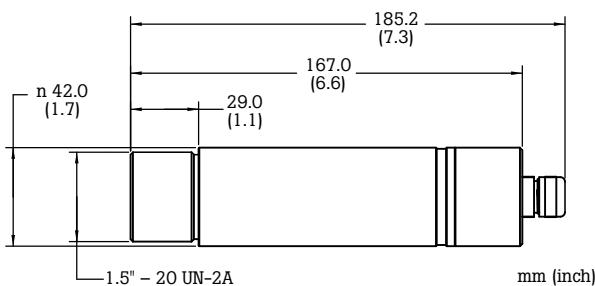
| | |
|----------------|--|
| Analog | 0/4 to 20 mA, 0 to 10 V, J/K thermocouple |
| Digital | RS485, USB (for setup only) |

12-Wires

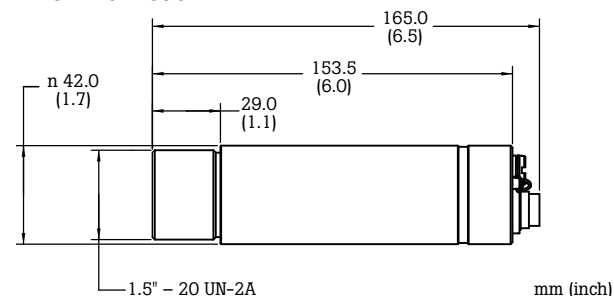
| | |
|---------------|---|
| Analog | output 0/4 to 20 mA, 0 to 10 V, input 0 to 10 V 0 to 10 V for emissivity setting, and background temperature compensation |
|---------------|---|

| | |
|----------------|--|
| Digital | RS485, USB (for setup only) alarm output, trigger input |
|----------------|--|

2-Wire and 6-Wire terminal block model



12 Wire M16 model



The Fluke Process Instruments Guarantee

The Thermalert 4.0 Series is supported by a 2 year warranty. With a network of trained representatives and agents in over one hundred countries and offices located in the U.S., Germany and China, we provide local service and support.

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