

### Highlights

- Wide temperature range from -40 to 2300 °C (-40 to 4172 °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 10 ms
- Laser sighting
- 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
- Multiple analog and digital interfaces
- Power over Ethernet (PoE)
- PROFINET IO and EtherNet/IP fieldbus communication

### Back Panels



Thermalert 4.0 supports 2-wire loop



Thermalert 4.0 with 4-pin connector



Thermalert 4.0 with 6-pin connector



Thermalert 4.0 with 12-pin connector

## Thermalert® 4.0

### Datasheet



### 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

**Weight** 500 g (17.6 oz)

### Electrical Specifications

#### Power Supply

2-Wire	12 to 24 VDC
4-Wire	Power over Ethernet
6/12-Wire	24 VDC nominal (20 to 48 VDC), 100 mA @ 24 V

#### 2-Wire

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

#### 4-Wire (M12)

Digital network communication Ethernet, EtherNet/IP, PROFINET IO, Full duplex, 100 Mbit/s interface

#### 6-Wire

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

#### 12-Wire (M16)

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

## Measurement Specifications

	<b>LT</b>	<b>G5</b>	<b>G7</b>	<b>P7</b>	<b>P3</b>
<b>Temperature Range</b>	<b>LT-07, LT-15, LT-30, LTB-30</b> -20 to 600°C (-4 to 1112°F)  <b>LT-50, LT-70</b> -40 to 1000°C (-40 to 1832°F)	<b>G5-30</b> 250 to 1650°C (482 to 3002°F)  <b>G5-70</b> 450 to 2250°C (842 to 4082°F)	<b>G7-70</b> 300 to 900°C (572 to 1652°F)	<b>P7-30</b> 10 to 360°C (50 to 680°F)	<b>P3-20</b> 25 to 450°C (77 to 842°F)
<b>Spectral Response</b>	8 to 14 μm	5 μm	7.9 μm	7.9 μm	3.43 μm
<b>System Accuracy<sup>1</sup></b>	±1% of reading or ±1.0°C (2.0°F) for T <sub>meas</sub> > 0°C (32°F)  for T <sub>meas</sub> ≤ 0°C (32°F): ±[1.0°C + 0.1* (0°C - T <sub>meas</sub> )] with T <sub>meas</sub> in °C ±[2.0°F + 0.1* (32°F - T <sub>meas</sub> )] with T <sub>meas</sub> in °F				±(3°C + 1% of reading) for T <sub>meas</sub> > 75°C (167°F)
<b>Repeatability<sup>2</sup></b>	±0.3°C (0.6°F) or 0.3% of reading <sup>3</sup>				±1°C (2°F) or 0.5% of reading <sup>3</sup>
<b>Response Time<sup>4</sup></b>	<b>LT-07, LT-15<sup>5</sup></b> : 150 ms <b>LT-30, LTB-30</b> : 30 ms <b>LT-50, LT-70</b> : 130 ms	<b>G5-30, G5-70</b> 60 ms	<b>G7-70</b> 130 ms	<b>P7-30</b> 130 ms	<b>P3-20</b> 130 ms <sup>6</sup>
<b>Optical Resolution (D:S)</b>	<b>LT-07</b> : 7:1 <b>LT-15</b> : 15:1 <b>LT-30, LTB-30</b> : 33:1 <b>LT-50</b> : 50:1 <b>LT-70</b> : 70:1	<b>G5-30</b> 33:1  <b>G5-70</b> 70:1	<b>G7-70</b> 70:1	<b>P7-30</b> 33:1	<b>P3-20</b> 20:1
<b>Focus Distance</b>	<b>LT-07</b> CFO 50 mm (2 in)  <b>LT-15</b> SFO 1520 mm (60 in)  <b>LT-30, LTB-30</b> SFO 1520 mm (60 in) CF1 76 mm (3 in) CF2 200 mm (7.9 in)  <b>LT-50</b> SFO 1520 mm (60 in) CF2 200 mm (7.9 in)  <b>LT-70</b> SF2 1250 mm (49 in) CF2 200 mm (7.9 in)	<b>G5-30</b> SFO 1520 mm (60 in)  <b>G5-70</b> SF2 1250 mm (49 in)	<b>G7-70</b> SF2 1250 mm (49 in)	<b>P7-30</b> SFO 1520 mm (60 in)	<b>P3-20</b> SF4 500 mm (20 in)
<b>Smallest Measurement Spot</b>	<b>LT-07</b> CF 7.1 mm (0.28 in)  <b>LT-15</b> SFO 101.3 mm (3.99 in)  <b>LT-30, LTB-30</b> SFO 46.1 mm (1.81 in) CF1 2.3 mm (0.09 in) CF2 6.1 mm (0.24 in)  <b>LT-50</b> SFO 30.4 mm (1.2 in) CF2 4 mm (0.16 in)  <b>LT-70</b> SF2 17.9 mm (0.7 in) CF2 2.9 mm (0.11 in)	<b>G5-30</b> SFO 46.1 mm (1.81 in)  <b>G5-70</b> SF2 17.9 mm (0.7 in)	<b>G7-70</b> SF2 17.9 mm (0.7 in)	<b>P7-30</b> SFO 46.1 mm (1.81 in)	<b>P3-20</b> SF4 25 mm (0.98 in)

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

<sup>2</sup> at ambient temperature 23°C ± 5°C (73°F ± 9°F)

<sup>3</sup> whichever is greater

<sup>4</sup> 90% value

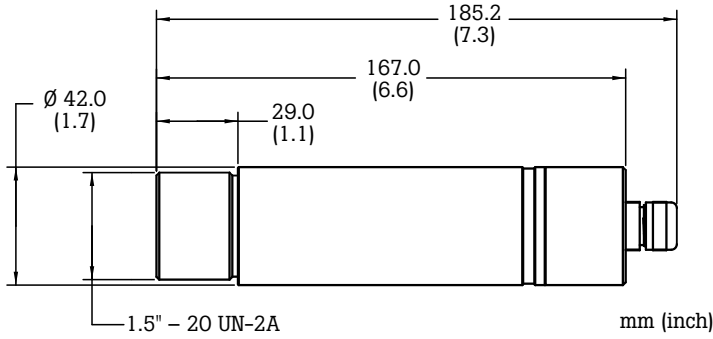
<sup>5</sup> Plastic lens only

<sup>6</sup> 10 s for T target < 150°C (302°F)

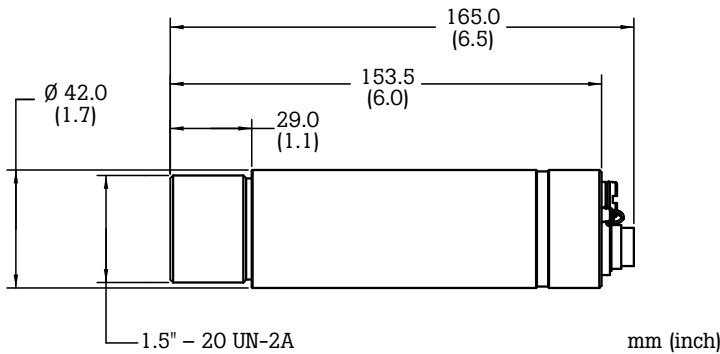
<b>MT</b>	<b>HT</b>	<b>3M</b>	<b>2M</b>	<b>1M</b>	
<b>MT-30</b> 200 to 1000°C (392 to 1832°F)  <b>MT-70</b> 450 to 2250°C (842 to 4082°F)	<b>HT-60</b> 500 to 2000°C (932 to 3632°F)	<b>3M-70</b> 100 to 600°C (212 to 1112°F)	<b>2M-150</b> 250 to 1400°C (482 to 2552°F)	<b>1ML-150</b> 500 to 1650°C (932 to 3002°F)  <b>1MH-150</b> 650 to 2300°C (1202 to 4172°F)	<b>Temperature Range</b>
3.9 µm	2.2 µm	2.3 µm	1.6 µm	1 µm	<b>Spectral Response</b>
±1% of reading or ±1.0°C (2.0°F) for Tmeas > 0°C (32°F)  for Tmeas ≤ 0°C (32°F): ±[1.0°C + 0.1* (0°C – Tmeas )] with Tmeas in °C ±[2.0°F + 0.1* (32°F – Tmeas )] with Tmeas in °F		± (2°C + 0.5% of reading)			<b>System Accuracy<sup>1</sup></b>
±0.3°C (0.6°F) or 0.3% of reading <sup>3</sup>		± (1°C + 0.25% of reading)			<b>Repeatability<sup>2</sup></b>
<b>MT-30, MT-70</b> 130 ms	<b>HT-60</b> 130 ms	<b>3M-70</b> 20 ms	<b>2M-150, 1ML-150, 1MH-150</b> 10 ms		<b>Response Time<sup>4</sup></b>
<b>MT-30</b> 33:1  <b>MT-70</b> 70:1	<b>HT-60</b> 60:1	<b>3M-70</b> 70:1	<b>2M-150, 1ML-150, 1MH-150</b> 150:1		<b>Optical Resolution (D:S)</b>
<b>MT-30</b> SFO 1520 mm (60 in) CF1 76 mm (3 in) CF2 200 mm (7.9 in)  <b>MT-70</b> SF2 1250 mm (49 in) CF1 76 mm (3 in) CF2 200 mm (7.9 in)	<b>HT-60</b> SFO 1520 mm (60 in) CF1 76 mm (3 in) CF2 200 mm (7.9 in)	<b>3M-70</b> SFO 1520 mm (60 in) CF2 200 mm (7.9 in)	<b>2M-150, 1ML-150, 1MH-150</b> SFO 1520 mm (60 in) CF2 200 mm (7.9 in)		<b>Focus Distance</b>
<b>MT-30</b> SFO 46.1 mm (1.81 in) CF1 2.3 mm (0.09 in) CF2 6.1 mm (0.24 in)  <b>MT-70</b> SF2 17.9 mm (0.7 in) CF1 1.1 mm (0.04 in) CF2 2.9 mm (0.11 in)	<b>HT-60</b> SFO 25.3 mm (1 in) CF1 1.3 mm (0.05 in) CF2 3.3 mm (0.13 in)	<b>3M-70</b> SFO 21.7 mm (0.85 in) CF2 2.9 mm (0.11 in)	<b>2M-150, 1ML-150, 1MH-150</b> SFO 10.1 mm (0.4 in) CF2 1.3 mm (0.05 in)		<b>Smallest Measurement Spot</b>

**Laser:** laser available per standard (except LT-07, LT-15, LTB-30, and P3 models).  
 2-wire devices require an additional power supply via USB.

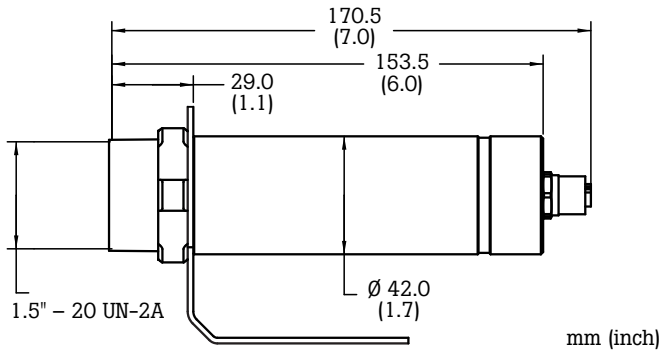
**Dimensions**



**2-Wire and  
6-Wire model**



**12-Wire model**



**4-Wire 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.

**Fluke Process Instruments**

**Americas**

Everett, WA USA  
Tel: +1 800 227 8074 (USA and Canada, only)  
+1 425 446 6300  
solutions@flukeprocessinstruments.com

**EMEA**

Berlin, Germany  
Tel: +49 30 4 78 00 80  
info@flukeprocessinstruments.de

**China**

Beijing, China  
Tel: +8610 6438 4691  
info@flukeprocessinstruments.cn

**Japan**

Tokyo, Japan  
Tel: +81 03 6714 3114  
info@flukeprocessinstruments.jp

**Asia East and South**

India Tel: +91 22 6249 5028  
Singapore Tel: +65 6799 5578  
sales.asia@flukeprocessinstruments.com

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JIGU TRADING CO.,LTD.  
[www.jigustrade.co.kr](http://www.jigustrade.co.kr)  
TEL : 82-2-562-7677 FAX : 82-2-562-6867