

Thermalert® 4.0

Datasheet



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

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

	LT	G5	G7	P7	P3
Temperature Range	LT-07, LT-15, LT-30, LTB-30 -20 to 600°C (-4 to 1112°F) LT-50, LT-70 -40 to 1000°C (-40 to 1832°F)	G5-30 250 to 1650°C (482 to 3002°F) G5-70 450 to 2250°C (842 to 4082°F)	G7-70 300 to 900°C (572 to 1652°F)	P7-30 10 to 360°C (50 to 680°F)	P3-20 25 to 450°C (77 to 842°F)
Spectral Response	8 to 14 µm	5 µm	7.9 µm	7.9 µm	3.43 µm
System Accuracy¹	±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				±(3°C + 1% of reading) for T _{meas} > 75°C (167°F)
Repeatability²	±0.3°C (0.6°F) or 0.3% of reading ³				±1°C (2°F) or 0.5% of reading ³
Response Time⁴	LT-07, LT-15⁵ : 150 ms LT-30, LTB-30 : 30 ms LT-50, LT-70 : 130 ms	G5-30, G5-70 60 ms	G7-70 130 ms	P7-30 130 ms	P3-20 130 ms ⁶
Optical Resolution (D:S)	LT-07 : 7:1 LT-15 : 15:1 LT-30, LTB-30 : 33:1 LT-50 : 50:1 LT-70 : 70:1	G5-30 33:1 G5-70 70:1	G7-70 70:1	P7-30 33:1	P3-20 20:1
Focus Distance	LT-07 CFO 50 mm (2 in) LT-15 SFO 1520 mm (60 in) LT-30, LTB-30 SFO 1520 mm (60 in) CF1 76 mm (3 in) CF2 200 mm (7.9 in) LT-50 SFO 1520 mm (60 in) CF2 200 mm (7.9 in) LT-70 SF2 1250 mm (49 in) CF2 200 mm (7.9 in)	G5-30 SFO 1520 mm (60 in) G5-70 SF2 1250 mm (49 in)	G7-70 SF2 1250 mm (49 in)	P7-30 SFO 1520 mm (60 in)	P3-20 SF4 500 mm (20 in)
Smallest Measurement Spot	LT-07 CF 7.1 mm (0.28 in) LT-15 SFO 101.3 mm (3.99 in) LT-30, LTB-30 SFO 46.1 mm (1.81 in) CF1 2.3 mm (0.09 in) CF2 6.1 mm (0.24 in) LT-50 SFO 30.4 mm (1.2 in) CF2 4 mm (0.16 in) LT-70 SF2 17.9 mm (0.7 in) CF2 2.9 mm (0.11 in)	G5-30 SFO 46.1 mm (1.81 in) G5-70 SF2 17.9 mm (0.7 in)	G7-70 SF2 17.9 mm (0.7 in)	P7-30 SFO 46.1 mm (1.81 in)	P3-20 SF4 25 mm (0.98 in)

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

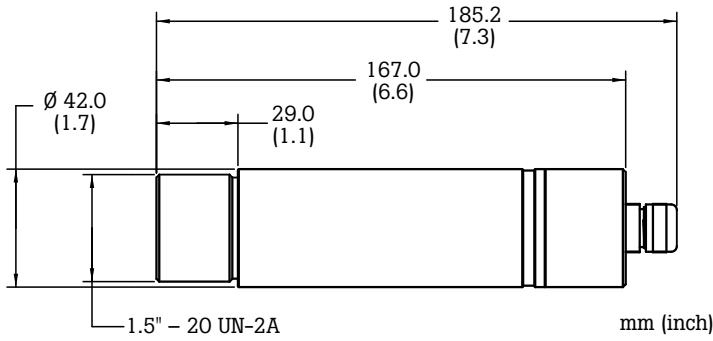
⁵ Plastic lens only

⁶ 10 s for T target < 150°C (302°F)

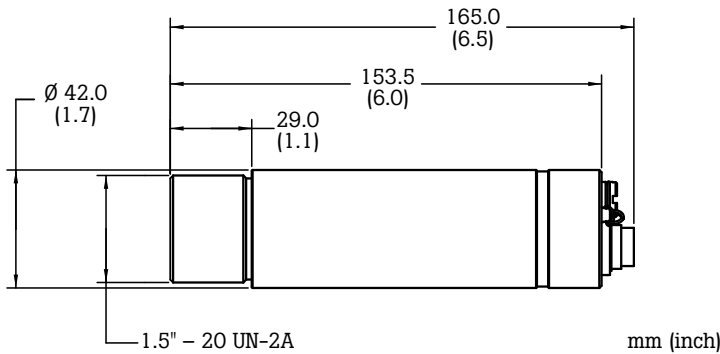
MT	HT	3M	2M	1M	
MT-30 200 to 1000°C (392 to 1832°F) MT-70 450 to 2250°C (842 to 4082°F)	HT-60 500 to 2000°C (932 to 3632°F)	3M-70 100 to 600°C (212 to 1112°F)	2M-150 250 to 1400°C (482 to 2552°F)	1ML-150 500 to 1650°C (932 to 3002°F) 1MH-150 650 to 2300°C (1202 to 4172°F)	Temperature Range
3.9 µm	2.2 µm	2.3 µm	1.6 µm	1 µm	Spectral Response
±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)			System Accuracy¹
±0.3°C (0.6°F) or 0.3% of reading ³		± (1°C + 0.25% of reading)			Repeatability²
MT-30, MT-70 130 ms	HT-60 130 ms	3M-70 20 ms	2M-150, 1ML-150, 1MH-150 10 ms		Response Time⁴
MT-30 33:1 MT-70 70:1	HT-60 60:1	3M-70 70:1	2M-150, 1ML-150, 1MH-150 150:1		Optical Resolution (D:S)
MT-30 SFO 1520 mm (60 in) CF1 76 mm (3 in) CF2 200 mm (7.9 in) MT-70 SF2 1250 mm (49 in) CF1 76 mm (3 in) CF2 200 mm (7.9 in)	HT-60 SFO 1520 mm (60 in) CF1 76 mm (3 in) CF2 200 mm (7.9 in)	3M-70 SFO 1520 mm (60 in) CF2 200 mm (7.9 in)	2M-150, 1ML-150, 1MH-150 SFO 1520 mm (60 in) CF2 200 mm (7.9 in)		Focus Distance
MT-30 SFO 46.1 mm (1.81 in) CF1 2.3 mm (0.09 in) CF2 6.1 mm (0.24 in) MT-70 SF2 17.9 mm (0.7 in) CF1 1.1 mm (0.04 in) CF2 2.9 mm (0.11 in)	HT-60 SFO 25.3 mm (1 in) CF1 1.3 mm (0.05 in) CF2 3.3 mm (0.13 in)	3M-70 SFO 21.7 mm (0.85 in) CF2 2.9 mm (0.11 in)	2M-150, 1ML-150, 1MH-150 SFO 10.1 mm (0.4 in) CF2 1.3 mm (0.05 in)		Smallest Measurement Spot

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.

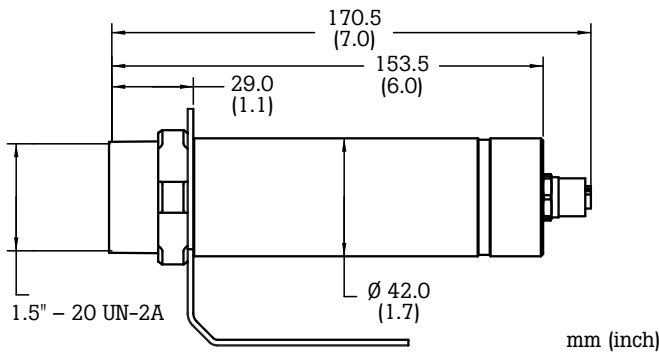
Dimensions



**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.

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