ExTemp

Intrinsically Safe Infrared Temperature Sensor





- Suitable for hazardous areas, Zone 0, 1 and 2 (gas), and Zone 20, 21 and 22 (dust), with a suitable Intrinsically Safe isolator
- Temperature range: -20°C to 1000°C
- Two wire, 4-20 mA output
- Rescalable output and adjustable emissivity setting via optional USB adapter
- Fast response time and high stability
- Stainless steel 316 housing ideal for offshore applications
- IP65 sealed
- Supplied with up to 25 m cable

Temperature range See table of Model Numbers Maximum Temperature Span 1000°C Minimum Temperature Span 100°C Output 4 to 20 mA Field of View See table of Model Numbers Accuracy ± 1°C or 1%, whichever is greater Repeatability ± 0.5°C or 0.5%, whichever is greater Repeatability ± 0.5°C or 0.5%, whichever is greater Emissivity Setting Range 0.20 to 1.00 (pre-set to 0.95) Emissivity Setting Method User configurable via USB interface Response Time, t ₉₀ 240 ms (90% response) Spectral Range 8 to 14 µm Supply Voltage 12 to 24 V DC ± 5% Maximum Current Draw 25 mA Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes RoHS Compliant		
Maximum Temperature Span Minimum Temperature Span Output 4 to 20 mA Field of View See table of Model Numbers Accuracy ± 1°C or 1%, whichever is greater Repeatability ± 0.5°C or 0.5%, whichever is greater Emissivity Setting Range 0.20 to 1.00 (pre-set to 0.95) Emissivity Setting Method User configurable via USB interface Response Time, t ₉₀ Spectral Range 8 to 14 µm Supply Voltage 12 to 24 V DC ± 5% Maximum Current Draw 25 mA Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range Relative Humidity Max. 95% non-condensing CE Marked Yes	General Specifications	
Minimum Temperature Span Output 4 to 20 mA Field of View See table of Model Numbers Accuracy ± 1°C or 1%, whichever is greater Repeatability ± 0.5°C or 0.5%, whichever is greater Emissivity Setting Range 0.20 to 1.00 (pre-set to 0.95) Emissivity Setting Method User configurable via USB interface Response Time, t ₉₀ 240 ms (90% response) Spectral Range 8 to 14 µm Supply Voltage 12 to 24 V DC ± 5% Maximum Current Draw Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range O°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked	Temperature range	See table of Model Numbers
Output Field of View See table of Model Numbers Accuracy \$\pmathrm{\text{to Cor 1\%, whichever is greater}}\$ \$\pmathrm{\text{Repeatability}}\$ \$\pmathrm{\text{to S°C or 0.5\%, whichever is greater}}\$ \$\pmathrm{\text{Emissivity Setting Range}}\$ \$0.20 to 1.00 (pre-set to 0.95)\$ Emissivity Setting Method User configurable via USB interface Response Time, \$\text{tg0}\$ \$240 ms (90\% response)\$ Spectral Range \$12 to 24 V DC \pmathrm{\text{to 24 V DC}}\$ Maximum Current Draw 25 mA Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions \$\text{\text{g 20 \times length 150 mm} (see Dimensions)}\$ Mounting \$\text{M20 \times 1.5 mm thread, length 46 mm, supplied with two mounting nuts}\$ Cable Length \$5 m, 10 m or 25 m as standard (custom lengths also available)}\$ Weight with 5 m Cable Environmental Environmental Environmental Rating \$\text{IP65 (NEMA 4)}\$ Ambient Temperature Range \$\text{0\circ CO 70\circ (Operating range)}\$ Max. 95\circ non-condensing \$\text{CE Marked}\$ Yes	Maximum Temperature Span	1000°C
Field of View See table of Model Numbers Accuracy ± 1°C or 1%, whichever is greater ### ### ### ### ### ### ### ### ### #	Minimum Temperature Span	100°C
Accuracy ± 1°C or 1%, whichever is greater Repeatability ± 0.5°C or 0.5%, whichever is greater Emissivity Setting Range 0.20 to 1.00 (pre-set to 0.95) Emissivity Setting Method User configurable via USB interface Response Time, t ₉₀ 240 ms (90% response) Spectral Range 8 to 14 μm Supply Voltage 12 to 24 V DC ± 5% Maximum Current Draw 25 mA Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked	Output	4 to 20 mA
Repeatability ± 0.5°C or 0.5%, whichever is greater Emissivity Setting Range 0.20 to 1.00 (pre-set to 0.95) Emissivity Setting Method User configurable via USB interface Response Time, t ₉₀ 240 ms (90% response) Spectral Range 8 to 14 µm Supply Voltage 12 to 24 V DC ± 5% Maximum Current Draw 25 mA Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Field of View	See table of Model Numbers
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Emissivity Setting Method Response Time, t ₉₀ Spectral Range 8 to 14 µm Supply Voltage 12 to 24 V DC ± 5% Maximum Current Draw 25 mA Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable Environmental Environmental Rating Relative Humidity Max. 95% non-condensing Ce Marked Yes	Repeatability	± 0.5°C or 0.5%, whichever is greater
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Spectral Range 8 to 14 µm Supply Voltage 12 to 24 V DC ± 5% Maximum Current Draw 25 mA Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Emissivity Setting Method	User configurable via USB interface
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Maximum Current Draw 25 mA Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Spectral Range	8 to 14 µm
Maximum Loop Impedance See Application Guide (available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Supply Voltage	12 to 24 V DC ± 5%
(available separately) Mechanical Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range Relative Humidity Max. 95% non-condensing CE Marked Yes	Maximum Current Draw	25 mA
Construction Stainless Steel 316 Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range Relative Humidity Max. 95% non-condensing CE Marked Yes	Maximum Loop Impedance	1 ' '
Major Dimensions Ø 20 x length 150 mm (see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range Relative Humidity Max. 95% non-condensing CE Marked Yes	Mechanical	
(see Dimensions) Mounting M20 x 1.5 mm thread, length 46 mm, supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Construction	Stainless Steel 316
supplied with two mounting nuts Cable Length 5 m, 10 m or 25 m as standard (custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range Relative Humidity Max. 95% non-condensing Yes	Major Dimensions	
(custom lengths also available) Weight with 5 m Cable 475 g Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Mounting	, ,
Environmental Environmental Rating IP65 (NEMA 4) Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Cable Length	,
Environmental Rating IP65 (NEMA 4) Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Weight with 5 m Cable	475 g
Ambient Temperature Range 0°C to 70°C (Operating range) Relative Humidity Max. 95% non-condensing CE Marked Yes	Environmental	
Relative Humidity Max. 95% non-condensing CE Marked Yes	Environmental Rating	IP65 (NEMA 4)
CE Marked Yes	Ambient Temperature Range	0°C to 70°C (Operating range)
100	Relative Humidity	Max. 95% non-condensing
RoHS Compliant Yes	CE Marked	Yes
	RoHS Compliant	Yes

Hazardous Area Classification	
The ExTemp is ATEX, IECEx and TIIS certified.	
ATEX Classification	Ex II 1GD
IECEx Classification (Gas)	Ex ia IIC T4 Ga
IECEx Classification (Dust)	Ex ia IIIC T135°C IP65 Da
Ambient Temperature Rating	-20°C ≤ Ta ≤ 70°C
Maximum DC Input Voltage	Ui = 28 V
Maximum Input Current	li = 93 mA
Maximum Input Power	Pi = 650 mW
Maximum Internal Capacitance	Ci = 8 nF
Maximum Internal Inductance	Li = 0 mH
ATEX Certificate Number	CML 14ATEX2079
IECEx Certificate Number	IECEx CML 14.0032
TIIS Certificate Number	TC21097

CONFIGURATION

The ExTemp sensor may be connected to a PC via the optional USB adapter and included Windows software.

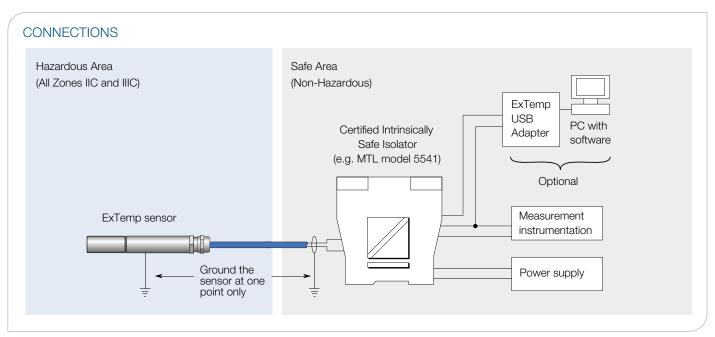
Configurable settings include the emissivity setting, 4-20 mA temperature range, averaging, peak and valley hold processing and reflected energy compensation.

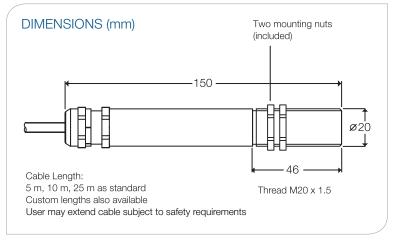
For more information on the software, please see the CalexConfig / CalexSoft 2 data sheet.





DIAMETER OF TARGET SPOT MEASURED VERSUS DISTANCE FROM SENSING HEAD Distance: Sensor to object (inches) 19.7 39.4 39 Spot Dia. (inches) Spot Dia. (inches) Spot Dia. (inches) Spot Dia. (inches) 1.8 1.1 0.20 0.49 D:S 2:1 D:S 15:1 D:S 30:1 11.0 5.0 11.0 12.5 Spot Dia. Dia. Spot Dia. 45.2 28.6 Spot Dia. (mm) 45.2 (mm) 78.6 Spot 111.9 100 200 500 1000 500 1000 100 200 Distance: Sensor to object (mm) -301 -CF -21 -151





ACCESSORIES

FBL Fixed mounting bracket (1-axis rotation) ABL Adjustable mounting bracket (2-axis rotation)

APMW Air purge collar (for 2:1 optics) APMN Air purge collar (for all other optics)

CALCERTA Calibration certificate, 3 temperature points, UKAS traceable

LCT USB adapter and configuration software

MODEL NUMBERS

