PyroEpsilon

Pyrometer with 4-20 mA Output and Adjustable Emissivity Setting

Sensor shown with optional PyroTune emissivity adjuster

- Temperature ranges from -20°C to 500°C
- Two-wire 4-20 mA output
- Adjustable emissivity via continuously variable 4-20 mA input - measure a wide range of target materials
- Choice of precision optics for large or small targets
- Fast response with high stability
- Stainless steel housing, sealed to IP65
- Quick and easy installation
- Wide range of accessories
- Conforms to industrial EMC standards

The PyroEpsilon is a simple infrared temperature sensor with an adjustable emissivity setting. It is ideal if the target is partially reflective.

The emissivity setting is adjustable via a two-wire 4-20 mA input, and can be adjusted continuously using a variable 4-20 mA source.
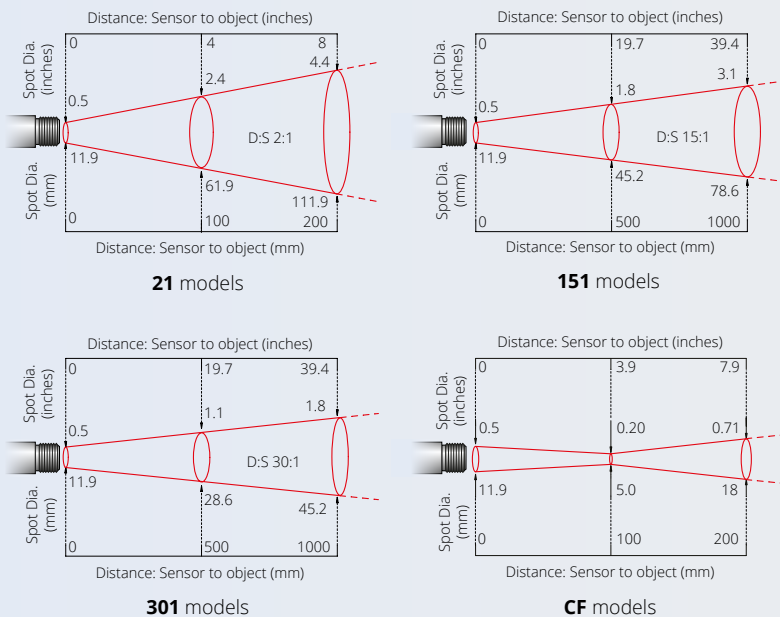
To set the emissivity manually, the optional PyroTune emissivity adjuster is available. The sensor is also compatible with PLC outputs or indicating controllers that can provide a 4-20 mA signal.

If no 4-20 mA input is provided, the emissivity setting will revert to 0.95, making the sensor suitable for measuring non-reflective non-metal materials (or painted metals) out of the box.

OPTICS

21 models

151 models

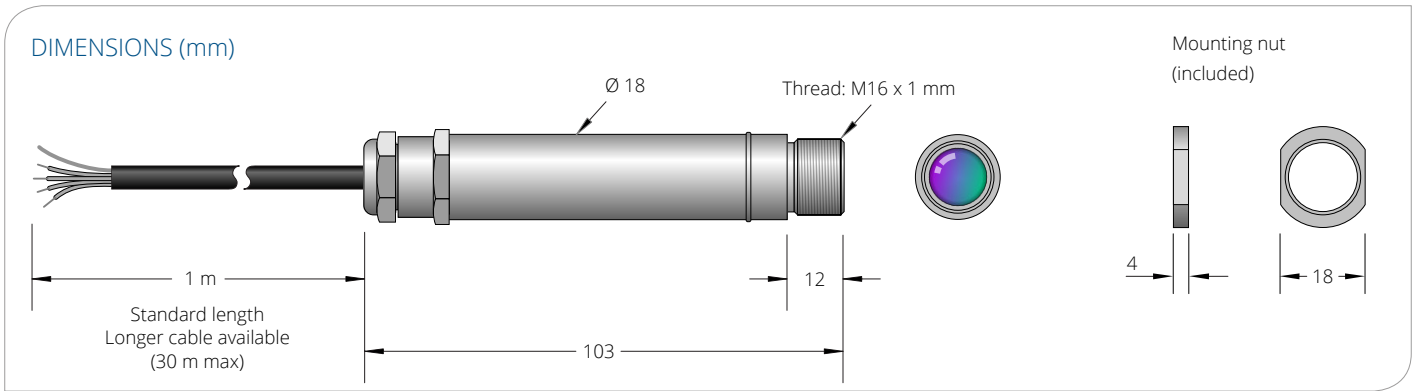
301 models

CF models

All models can measure at longer distances than shown, with a larger measured spot size.
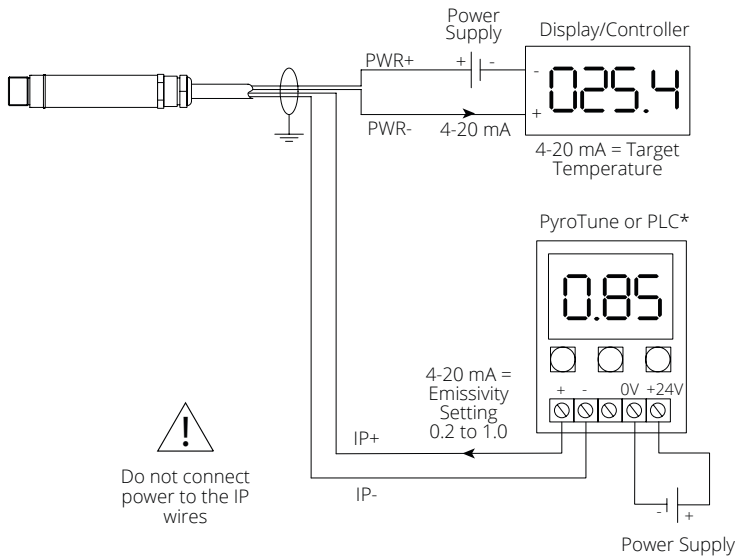
Diagrams show the diameter of the measured target spot versus the distance from the sensing head (90% energy).

SPECIFICATIONS

General	
Output	Two-wire 4-20 mA
Temperature Range	LT = -20 to 100 °C MT = 0 to 250 °C HT = 0 to 500 °C
Accuracy	±1% of reading or ±1°C, whichever is greater
Repeatability	± 0.5% of reading or ± 0.5°C, whichever is greater
Emissivity Setting	Variable 0.2 to 1.0 via continuous 4-20 mA input
Response Time	240 ms (90% response)
Spectral Range	8 to 14 µm
Supply Voltage (at Sensor)	6 V DC to 28 V DC
Max. Loop Impedance	900 Ω (output loop)
Input Impedance	50 Ω (input loop)
Max. Current Draw	20 mA

Mechanical	
Construction	Stainless Steel
Dimensions	18 mm diameter x 103 mm long
Thread Mounting	M16 x 1 mm pitch
Cable Length	1m (longer lengths available to order)
Weight with Cable	95 g

Environmental	
Environmental (IP) Rating	IP65
Ambient (Operating) Temperature Range	0°C to 70°C
Ambient (Operating) Humidity	95% max. non-condensing

CALEX ELECTRONICS LIMITED

DIMENSIONS (mm)

Ø 18

Thread: M16 x 1 mm

Mounting nut (included)

1 m
Standard length
Longer cable available
(30 m max)

12

103

4

18

CONNECTIONS

Power Supply

Display/Controller

PWR+

-025.4

PWR-   4-20 mA

4-20 mA = Target Temperature

PyroTune or PLC*

0.85

4-20 mA = Emissivity Setting 0.2 to 1.0

+ -   0V +24V

IP+

IP-

Power Supply

⚠

Do not connect power to the IP wires

* A choice of indicating controllers, providing emissivity adjustment for the PyroEpsilon sensor, as well as temperature display and relay outputs, is also available. Contact Calex for more information.
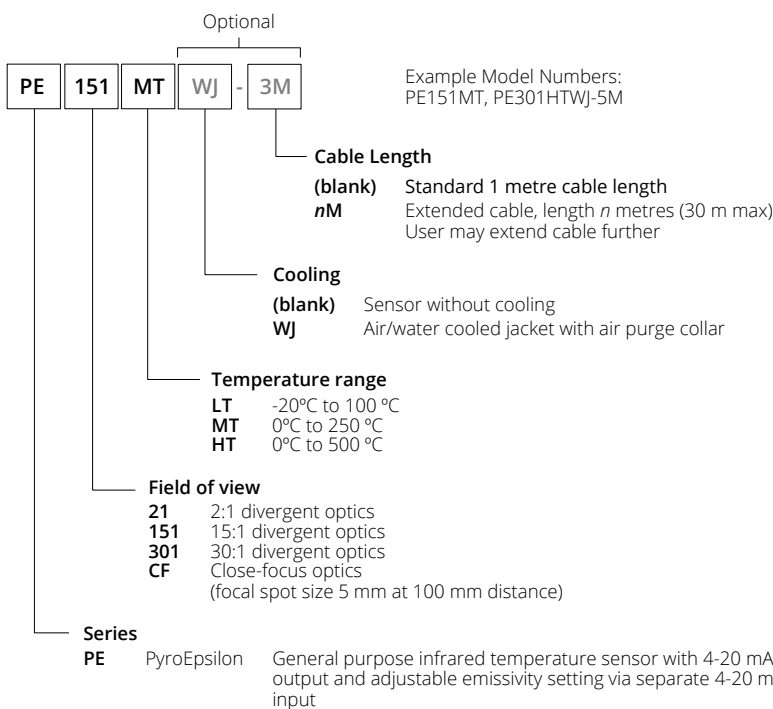
PYROTUNE

The optional PyroTune emissivity adjuster provides a continuous 4-20 mA current signal to the PyroEpsilon sensor. Simple push-button controls allow the emissivity setting to be adjusted. The built-in LCD display shows the emissivity or mA value.

PyroTune Specifications	
Output	4-20 mA for emissivity adjustment of PyroEpsilon sensor
Supply Voltage	24 V DC (13 to 28 V DC)
Display Format	3.5 Digit LCD
Display Units	Emissivity (0.2 to 1.0) or current (4-20 mA)
Adjustment	Push buttons (raise, lower, set)
Construction	Polycarbonate with gasket
Dimensions	65 (h) x 50 (w) x 35 (d) mm
Weight	72 g
IP Rating	IP65
Ambient Temp.	0°C to 70°C (operating temperature)
Relative Humidity	95% max (non condensing)

MODEL NUMBERS

Optional

| PE | 151 | MT | WJ | - | 3M |

Example Model Numbers:
PE151MT, PE301HTWJ-5M

Cable Length
(blank)   Standard 1 metre cable length
nM   Extended cable, length n metres (30 m max)
User may extend cable further

Cooling
(blank)   Sensor without cooling
WJ   Air/water cooled jacket with air purge collar

Temperature range
LT   -20ºC to 100 ºC
MT   0ºC to 250 ºC
HT   0ºC to 500 ºC

Field of view
21   2:1 divergent optics
151   15:1 divergent optics
301   30:1 divergent optics
CF   Close-focus optics
(focal spot size 5 mm at 100 mm distance)

Series
PE   PyroEpsilon   General purpose infrared temperature sensor with 4-20 mA output and adjustable emissivity setting via separate 4-20 mA input

ACCESSORIES

Laser sighting tool **LSTS**

Dual laser sighting bracket, adjustable **DLSBAS** or fixed **DLSBFS**

Fixed mounting bracket **FBS**

Adjustable mounting bracket **ABS**

Air or water cooled jacket with air purge collar **WJ** (factory-fitted - see Model Numbers)

Air purge collar for 2:1 optics **APSW** or for all other optics (shown above) **APSN**