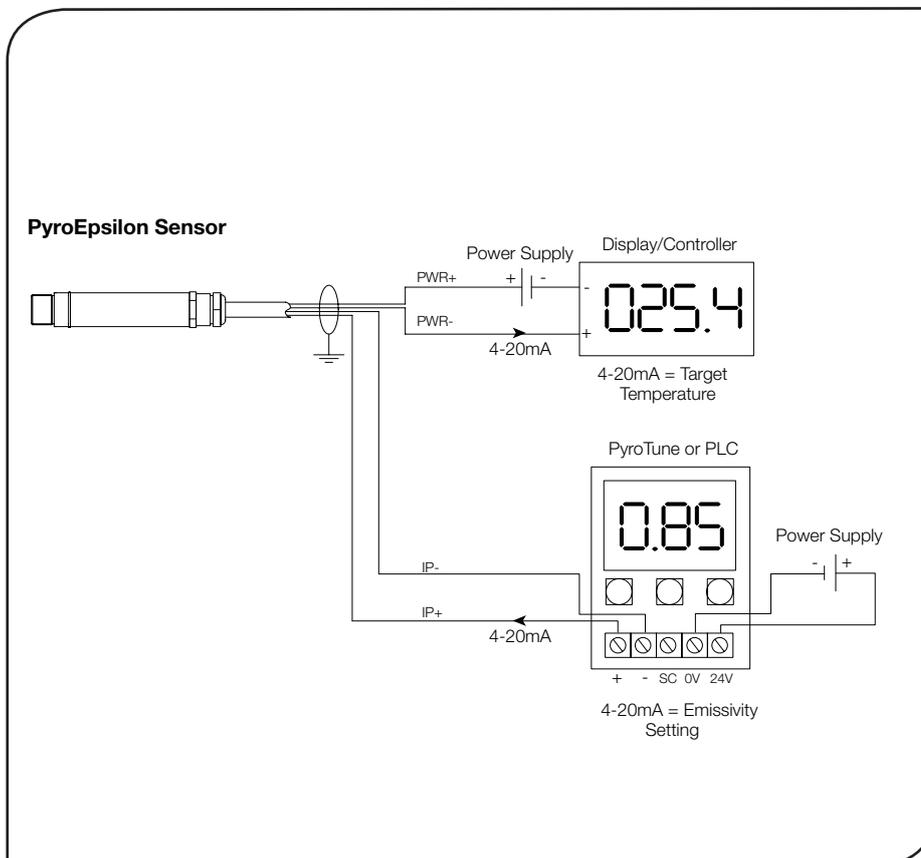


# PyroEpsilon

## Compact Non-Contact Temperature Sensor with Controllable Emissivity Setting



- Temperature range: -20°C to 500°C
- Two-wire 4-20 mA output proportional to target temperature
- 4-20mA input to control emissivity setting
- Optional PyroTune manual emissivity adjuster
- Field of view: 2:1, 15:1, 30:1 or close focus
- Fast response with high stability
- Stainless steel housing, sealed to IP65
- Quick and easy installation
- Optional air/water cooled housing, air purge collar, laser sighting tool and mounting brackets

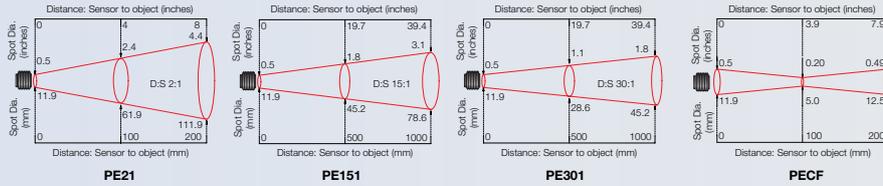


The PyroEpsilon Series is a range of high quality, low cost, compact sensors which measure the temperature of inaccessible or moving objects and materials. They measure temperatures from -20°C to 500°C, accurately and consistently, with an outstanding response time of 240 ms.

PyroEpsilon sensors transmit the target temperature as a 4-20 mA output and offer a simple solution for most non-contact temperature measurement applications.

The sensor's emissivity setting can be adjusted from 0.2 to 1.0 to cope with different target materials and is controlled by a 4-20 mA input. This gives the opportunity to adjust the emissivity setting automatically from a programmable logic controller (PLC). Alternatively the emissivity setting can be adjusted manually using the optional PyroTune module. If the 4-20 mA input is left open or short-circuit the emissivity setting defaults to 0.95.

## DIAMETER OF TARGET SPOT MEASURED VERSUS DISTANCE FROM SENSING HEAD



## PYROEPSILON SPECIFICATIONS

### Temperature Range vs Field-of-View table

| Field of View | -20°C to 100°C | 0°C to 250°C | 0°C to 500°C |
|---------------|----------------|--------------|--------------|
| 2:1           | PE21LT         | PE21MT       | -            |
| 15:1          | PE151LT        | PE151MT      | PE151HT      |
| 30:1          | PE301LT        | PE301MT      | PE301HT      |
| ø5mm @ 100mm  | PECFLT         | PECFMT       | PECFHT       |

|   |   |
|---|---|
| <b>Output</b>                             | 4-20mA  |
| <b>Accuracy</b>                           | ±1% of reading or ±1°C whichever is greater       |
| <b>Repeatability</b>                      | ± 0.5% of reading or ± 0.5°C whichever is greater |
| <b>Emissivity</b>                         | 0.2 to 1.0 via 4-20mA input                       |
| <b>Response Time, <math>t_{90}</math></b> | 240 ms (90% response)                             |
| <b>Spectral Range</b>                     | 8 to 14 $\mu$ m                                   |
| <b>Supply Voltage</b>                     | 24 V DC (28 V DC max.)                            |
| <b>Min. Sensor Voltage</b>                | 6 V DC  |
| <b>Max. Loop Impedance</b>                | 900 $\Omega$ (4-20 mA output)                     |
| <b>Input Impedance</b>                    | 50 $\Omega$                                       |

### MECHANICAL

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

### ENVIRONMENTAL

|                                  |                         |
|----------------------------------|-------------------------|
| <b>Environmental Rating</b>      | IP65                    |
| <b>Ambient Temperature Range</b> | 0°C to 70°C             |
| <b>Relative Humidity</b>         | 95% max. non-condensing |

## PYROTUNE SPECIFICATIONS

|                       |  |
|-----------------------|--|
| <b>Output</b>         | 4-20mA   |
| <b>Supply Voltage</b> | 24 V DC (13 V to 28 V DC)                      |
| <b>Display Format</b> | 3.5 digit LCD                                  |
| <b>Display Units</b>  | Emissivity (0.2 to 1.0) or current (4 - 20 mA) |
| <b>Adjustment</b>     | Push-buttons (raise/lower/set)                 |

### MECHANICAL

|                     |  |
|---------------------|--|
| <b>Construction</b> | Polycarbonate with gasket, transparent lid (PC) and quick release screws |
| <b>Mounting</b>     | Surface  |
| <b>Dimensions</b>   | 65 mm tall x 50 mm wide x 35 mm deep                                     |
| <b>Weight</b>       | 72 g   |

### ENVIRONMENTAL

|                                  |                         |
|----------------------------------|-------------------------|
| <b>Environmental Rating</b>      | IP65                    |
| <b>Ambient Temperature Range</b> | 0°C to 70°C             |
| <b>Relative Humidity</b>         | 95% max. non-condensing |

All PyroEpsilon sensors are fitted with precision Germanium lenses for accurate optics. Model PE21 has 2:1 optics making it suitable for most applications where the sensor can be mounted close to the target. Model PE151 is designed for small or distant targets and has an optical resolution of 15:1. Model PE301 is designed for very small or distant targets and has an optical resolution of 30:1. Model PECF is designed for targets as small as ø5 mm at a distance of 100 mm from the sensor

## ACCESSORIES



### FIXED MOUNTING BRACKET

The L-shaped fixed mounting bracket offers a rigid support for the sensor and allows fine adjustment in a single plane.



### ADJUSTABLE MOUNTING BRACKET

The adjustable mounting bracket consists of a fixed mounting bracket plus another L-shaped bracket. When assembled as shown the adjustable mounting bracket offers a rigid support for the sensor and allows fine adjustment in two planes.



### AIR PURGE COLLAR

The air purge collar is used to keep dust, fumes, moisture and other contaminants away from the lens. Air flows into the fitting on the side and out of the aperture at the front.



### AIR/WATER COOLED HOUSING

The air/water cooled housing allows the sensor to withstand ambient temperatures which exceed the normal 70°C limit. Air or water (depending on the degree of cooling required) flows into one of the fittings on the side and out of the other. To prevent condensation forming on the lens, the air/water cooled housing is supplied complete with an air purge collar. Please note, the air/water cooled housing must be ordered with the sensor and cannot be fitted by the user.



### LASER SIGHTING TOOL

The Laser Sighting Tool screws onto the front of the sensor during installation and indicates precisely where the sensor is aiming. Once the sensor has been aimed at the centre of the target and locked in position the Laser Sighting Tool can be removed. The laser is activated by means of a push button on the front of the tool which has a latching mechanism.