

PyroUSB PC Configurable Non-Contact Temperature Sensor with 4 to 20 mA Output



The PyroUSB Series is a range of high performance, compact sensors which measure the temperature of inaccessible or moving objects and materials.



GUEMISA

Sta. Virgilia, 29 - 28033 Madrid - Tfno.: 91 764 21 00
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<http://www.guemisa.com> - ventas@guemisa.com



CALEX
ELECTRONICS LIMITED

- Configurable temperature range, emissivity setting etc. from a PC via CalexSoft software and USB cable (supplied)
- Features max; min; average and instantaneous readings; peak or valley hold; reflected energy compensation
- OPC Server capabilities
- Temperature range -40 to 1000°C
- Emissivity: 0.1 to 1.0
- Response time: 240 ms to 90%
- Stainless steel housing, sealed to IP65
- Field of view: 15:1, 30:1 or Close Focus
- 4 to 20 mA output
- Quick and easy installation
- Optional air/water cooled housing, air purge collar, laser sighting tool and mounting brackets



GENERAL SPECIFICATIONS

Temperature Range	-40°C to 1000°C
Field-of-View	15:1 (PyroUSB-151) 30:1 (PyroUSB-301) $\varnothing 5\text{mm}$ @ 100mm (PyroUSB-CF)
Output	4 to 20 mA (linear with temperature)
Configuration	Via PC port conforming to USB 2.0
Accuracy	$\pm 1\%$ of reading or $\pm 1^{\circ}\text{C}$ whichever is greater
Repeatability	$\pm 0.5\%$ of reading or $\pm 0.5^{\circ}\text{C}$ whichever is greater
Emissivity	0.1 to 1.0
Response Time, t_{90}	240 ms (90% response)
Spectral Range	8 to 14 μm
Supply Voltage	24 V DC (28Vdc max)
Sensor Voltage	6 V DC min
Maximum Loop Impedance	900 Ω
Maximum Span	1000°C
Minimum Span	100°C

MECHANICAL

Construction	Stainless Steel
Dimensions	25 mm diameter x 106.5 mm long
Thread mounting	M20 x 1 mm pitch
Weight with Output Cable	175 g
Output Cable Length	1 m
USB Cable Length	1 m

ENVIRONMENTAL

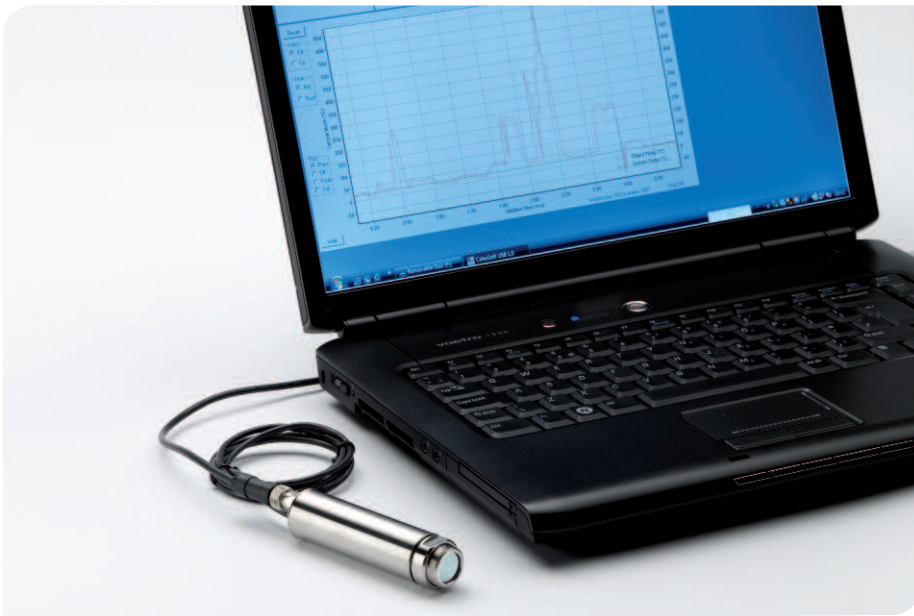
Environmental Rating	IP65
Ambient Temperature Range	0°C to 70°C
Relative Humidity	95% max. non-condensing



The PyroUSB Series measures temperatures from -40°C to 1000°C accurately and consistently, with an outstanding response time of 240 ms. The 4 to 20 mA output is compatible with almost any indicator, controller, recorder, data logger etc. without the need for special interfacing or signal conditioning.

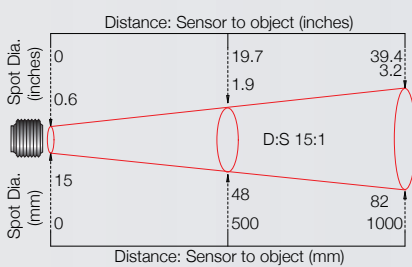
PyroUSB-151 has 15:1 optics making it suitable for most applications. PyroUSB-301 is specially designed for distant targets and has an optical resolution of 30:1. PyroUSB-CF is designed for small targets and measures a spot size of $\varnothing 5\text{mm}$ at 100mm distance.

All PyroUSB Series sensors are fully configurable from a PC using the CalexSoft software and USB cable supplied. This user friendly software enables the user to set the range and emissivity, compensate for reflected energy; apply filtering; select max, min, average or instantaneous readings; and peak or valley hold processing. These features can also be monitored and adjusted by an OPC Client. Other features include Data Acquisition, Alarms and a Scrolling Graphical Display.

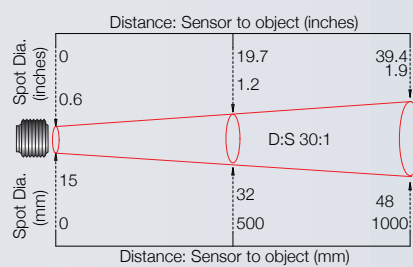


The sensor will operate with either the 4 to 20 mA cable connected, the USB cable connected, or both. The USB cable has an IP65 connector at the sensor end. An IP65 cap protects the sensor when the USB cable is not connected.

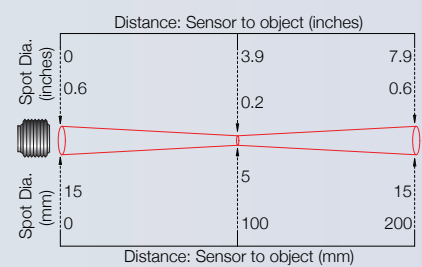
DIAMETER OF TARGET SPOT MEASURED VERSUS DISTANCE FROM SENSING HEAD



PyroUSB-151



PyroUSB-301



PyroUSB-CF

All PyroUSB Series Sensors are supplied with a stainless steel mounting nut and are easy to install.

Standard sensors will operate in ambient temperatures up to 70°C. For more hostile environments or difficult mounting conditions a wide range of accessories is available.

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.

OPTIONS

Longer output cable (3 m max.)
Certificate of calibration

