

PyroUSB

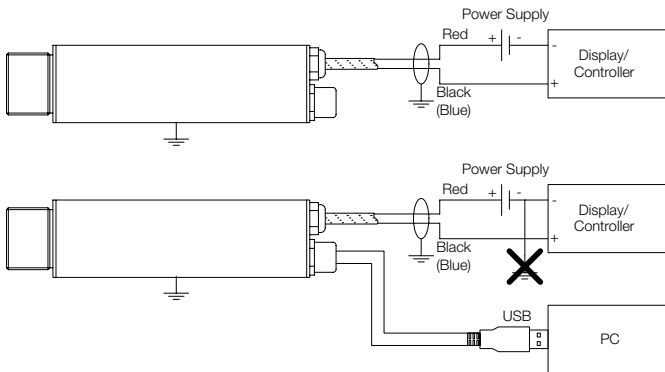
USB Configurable Infrared Temperature Sensors with mA Output



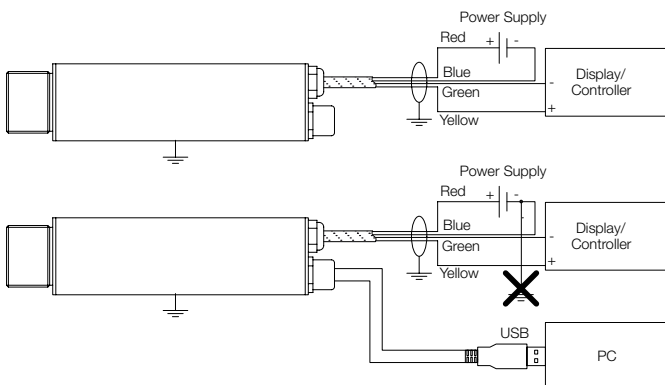
General purpose model shown, with two-wire 4-20 mA output

- Fast, accurate non-contact temperature measurement
- General purpose models suitable for most non-metals
- Short wavelength models suitable for reflective targets such as steel rollers and other metal surfaces, even at low temperatures
- Configurable temperature range, emissivity setting etc. via USB using the included cable and software
- Features max, min, average and instantaneous readings; peak or valley hold; reflected energy compensation
- OPC Server capabilities
- Temperature ranges from -40 to 2000°C
- Stainless steel housing, sealed to IP65
- Choice of optics
- 4 to 20 mA output
- Quick and easy installation
- Wide range of accessories

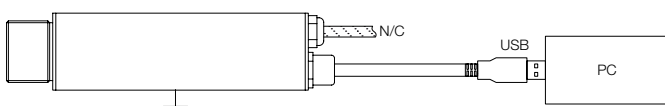
PYROUSB (GENERAL PURPOSE) MODELS:



PYROUSB 2.2 (HIGH TEMPERATURE) MODELS:



ALL MODELS:



Note: The sensor must be grounded at only one point, either the cable shield or the sensor housing.

The PyroUSB Series measures temperatures from -40°C to 2000°C accurately and consistently, with an outstanding response time as low as 240 ms. The selectable 0 to 20 mA or 4 to 20 mA output is compatible with almost any indicator, controller, recorder or data logger, without the need for special interfacing or signal conditioning.

A choice of measurement wavelengths is available to suit a range of applications.

PyroUSB (general purpose) models can measure from -40°C to 1000°C . They are suitable for measuring high-emissivity materials such as paper, thick plastics, food, pharmaceuticals, rubber, asphalt and painted surfaces.

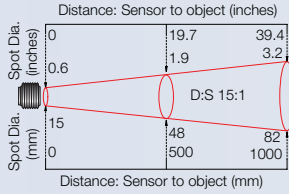
PyroUSB 2.2 (high temperature) models can measure from 45°C to 2000°C . They provide a more accurate reading than general-purpose sensors when measuring reflective surfaces including many metals. They are also capable of measuring temperatures through glass.

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 temperature range and emissivity, compensate for reflected energy, apply filtering, select max, min, average or instantaneous readings, and configure 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.

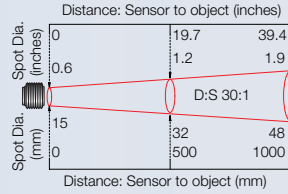
The sensor will operate with either the 4 to 20 mA cable connected, the USB cable connected, or both. The USB cable has an IP65 cap protects the sensor when the USB cable is not connected.

OPTICS Diameter of target spot measured versus distance from sensing head (90% energy)

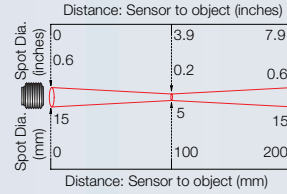
PyroUSB (general purpose models):



PU151

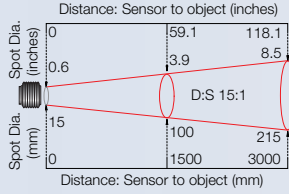


PU301

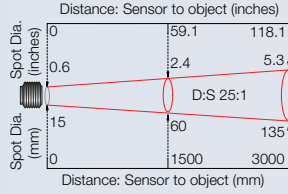


PUCF

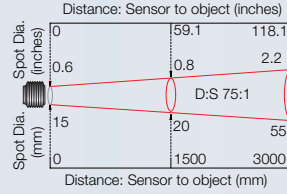
PyroUSB 2.2 (high temperature models):



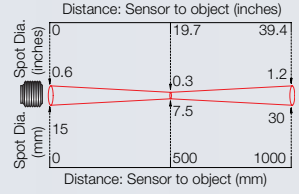
PU151-2.2



PU251-2.2



PU751-2.2



PUCF-2.2

GENERAL SPECIFICATIONS

	PyroUSB General Purpose	PyroUSB 2.2 High Temperature
Temperature Range	Choice of ranges from -40°C to 1000°C	Choice of ranges from 45°C* to 2000°C (see Minimum Measurable Temperature and Model Numbers)
Field-of-View	Choice of optics (see Optics and Model Numbers)	
Output	4 to 20 mA (linear with temperature)	Selectable 4 to 20 mA or 0 to 20 mA (linear with temperature)
Configuration	Via PC port conforming to USB 2.0	
Accuracy *	±1°C or ±1% of reading, whichever is greater	±2°C or ±1% of reading, whichever is greater
Repeatability *	±0.5% of reading or ±0.5°C, whichever is greater	
Emissivity Setting	0.1 to 1.0	
Response Time, t90	≥240 ms (90% response)	
Spectral Range	8 to 14 μm	2.0 to 2.6 μm
Supply Voltage	24 V DC (26 V DC max)	
Sensor Voltage	6 V DC min	11 V DC min
Max Loop Impedance	900 Ω @ 24 V DC	
Maximum Span	Full temperature range	
Minimum Span	100°C	

* Object temperature > Tmin (see graph of Minimum Measurable Temperature)

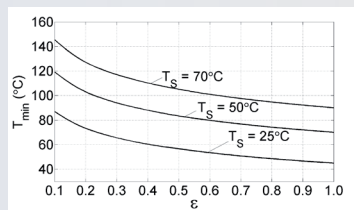
MECHANICAL

Construction	Stainless Steel
Dimensions	Ø 25 mm x 106.5 mm
Thread mounting	M20 x 1 mm pitch
Weight with Output Cable	175 g
Output Cable Length	1 m (longer cable to order)
USB Cable Length	1 m

ENVIRONMENTAL

Environmental Rating	IP65
Ambient Temperature	0°C to 70°C (cooling available for higher temperatures)
Relative Humidity	95% max. non-condensing

MINIMUM MEASURABLE TEMPERATURE (PU151LT.2.2 only)



Graph showing the minimum measurable object temperature (T_{min}), determined by surface emissivity (ϵ) and sensor temperature (T_s).

ACCESSORIES



Laser Sighting Tool **APL**



Adjustable mounting bracket **ABL**



Air/water cooled housing **WJ**



Air purge **APL**

ACCESSORIES ALSO AVAILABLE

- Fixed mounting bracket **FBL**
- Extended analogue output cable (30 m max):
 - for PyroUSB (general purpose) models without cooling **PUCE**
 - for PyroUSB (general purpose) WJ models **PUCEHT**
- for PyroUSB 2.2 (High Temperature) models **PU2.2CE**
- Protective plastic window with stainless steel holder for PyroUSB (general purpose) models **PWL**
- Dual laser sighting bracket:
 - fixed **DLSBFL**
 - adjustable **DLSBAL**
- 3-point calibration certificate **CALCERTA**

MODEL NUMBERS - General Purpose

PUxxx xx	
—	Cooling
—	(blank) = Sensor without cooling
—	WJ = Air/water cooled jacket with air purge collar
—	Field of view
—	151 = 15:1 divergent optics
—	301 = 30:1 divergent optics
—	CF = Close-focus optics (focal spot size 5 mm at 100 mm distance)

MODEL NUMBERS - High Temperature

PUxxx xx 2.2 xx	
—	Cooling
—	(blank) = Uncooled sensor
—	WJ = Air/water cooled jacket with air purge collar
—	Temperature range
—	LT = 45 to 300 °C (model PU151LT.2.2 only)
—	PT = 100 to 400 °C (model PU151PT.2.2 only)
—	MT = 250 to 1000 °C
—	HT = 450 to 2000 °C
—	Field of view
—	151 = 15:1 divergent optics (model PU151LT or PT)
—	251 = 25:1 divergent optics (model PU251MT or HT)
—	751 = 75:1 divergent optics (model PU751MT or HT)
—	CF = Close-focus optics (focal spot size 7.5 mm at 500 mm distance) (model PUCFMT or HT)

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 Specifications subject to change without notice