

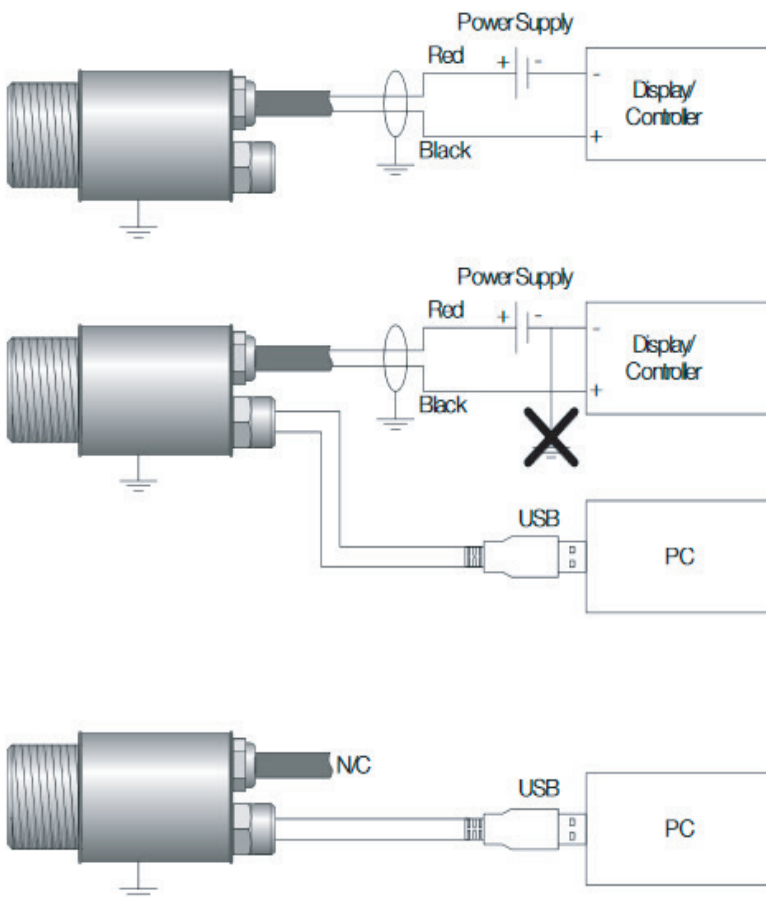
PSC-IR-USB Series

USB Configurable Infrared Temperature Sensors with 2-Wire, 4-20 mA Output



- Long wavelength PSC-IR-USB models suitable for low reflection materials
- Short wavelength PSC-IR-USB 2.2 models suitable for reflective targets such as metals starting at 45°C
- Temperature ranges from -40 to 2000 °C
- 2-wire, 4 to 20 mA output
- Configurable temperature range, emissivity setting etc. via USB cable and software (included)
- Features max, min, average; peak or valley hold; reflected energy compensation
- Modbus Protocol
- Stainless steel housing, sealed to IP65
- Choice of optics
- Quick and easy installation
- Wide range of accessories

PSC-IR-USB MODELS (WIRING DIAGRAMS):



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

The PSC-IR-USB Series measures temperatures from -40°C to 2000°C with a response time of 200 ms. The 4 to 20mA output is compatible with most temperature indicators, controllers, recorders, or data loggers without the need for special interfacing or signal conditioning.

PSC-IR-USB models (8-14 μm) can measure temperature from -40°C to 1000°C. They are suitable for measuring high-emissivity materials such as paper, thick plastics, food, rubber, pharmaceuticals, asphalt, and painted surfaces.

PSC-IR-USB 2.2 models (2.2 μm) offers temperature ranges from 45°C to 2000°C. This short wave sensor series provides more accurate readings than general-purpose sensors when measuring reflective surfaces such as metals. They are also capable of measuring temperatures through glass, quartz, or sapphire windows.

All PSC-IR-USB Series sensors are fully configurable from a PC, using the PSCConfig software with supplied USB cable. 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. Other features include data acquisition, alarms and a scrolling graphical display.

The IR sensor can 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.



SOFTWARE

PSSConfig is simple, touch-friendly software, compatible with versions of Windows from Vista onwards. PSSConfig is supplied with each sensor.

Alternatively, the sensor's Modbus protocol allows it to be used with other third party Modbus software.

FEATURES

Temperature display

Scrolling temperature chart

Data logging to comma-separated text file, compatible with Excel

Sensor configuration:

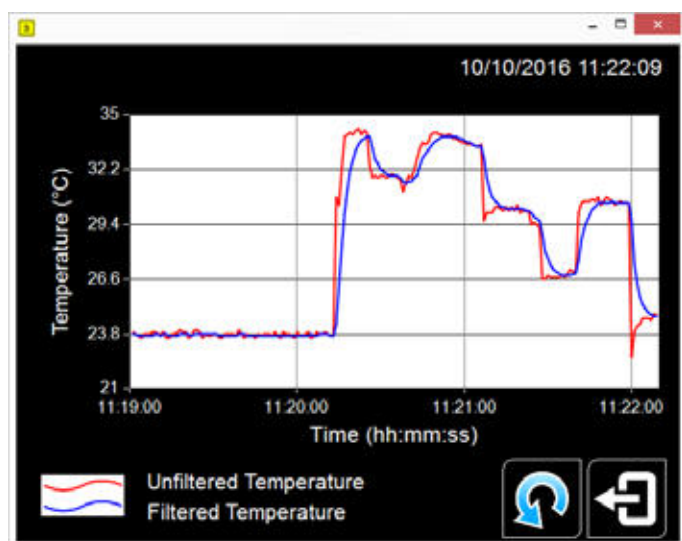
- Emissivity setting

- Averaging

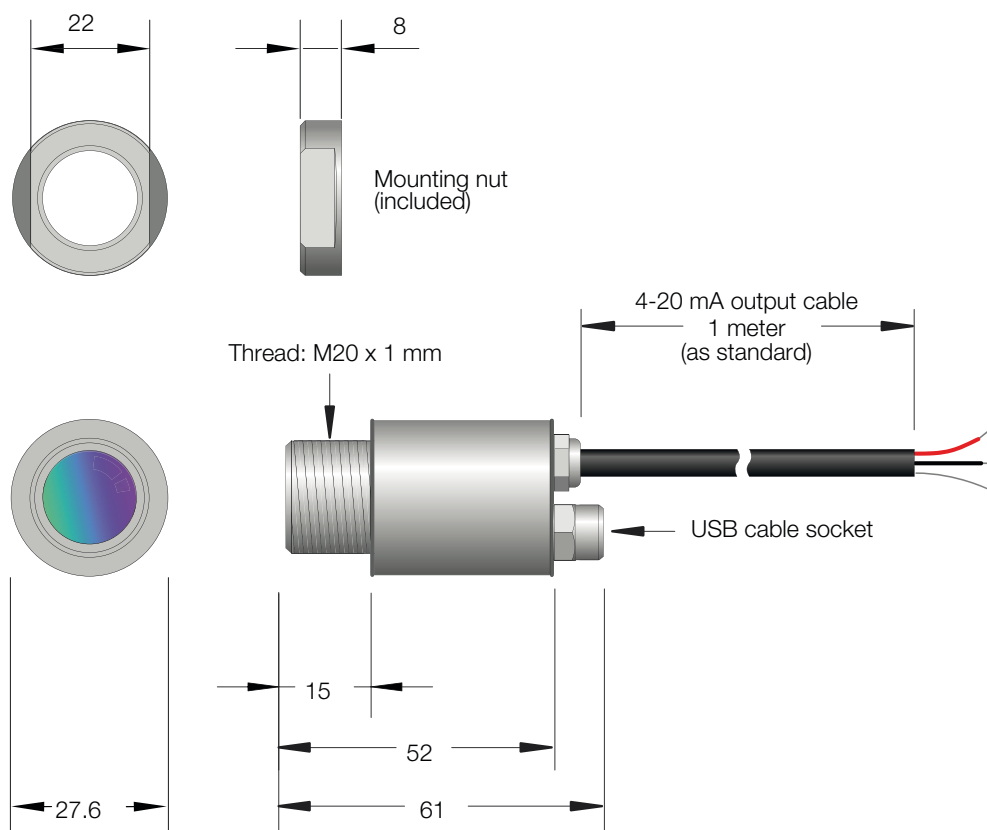
- Peak/valley hold processing

- Reflected energy compensation

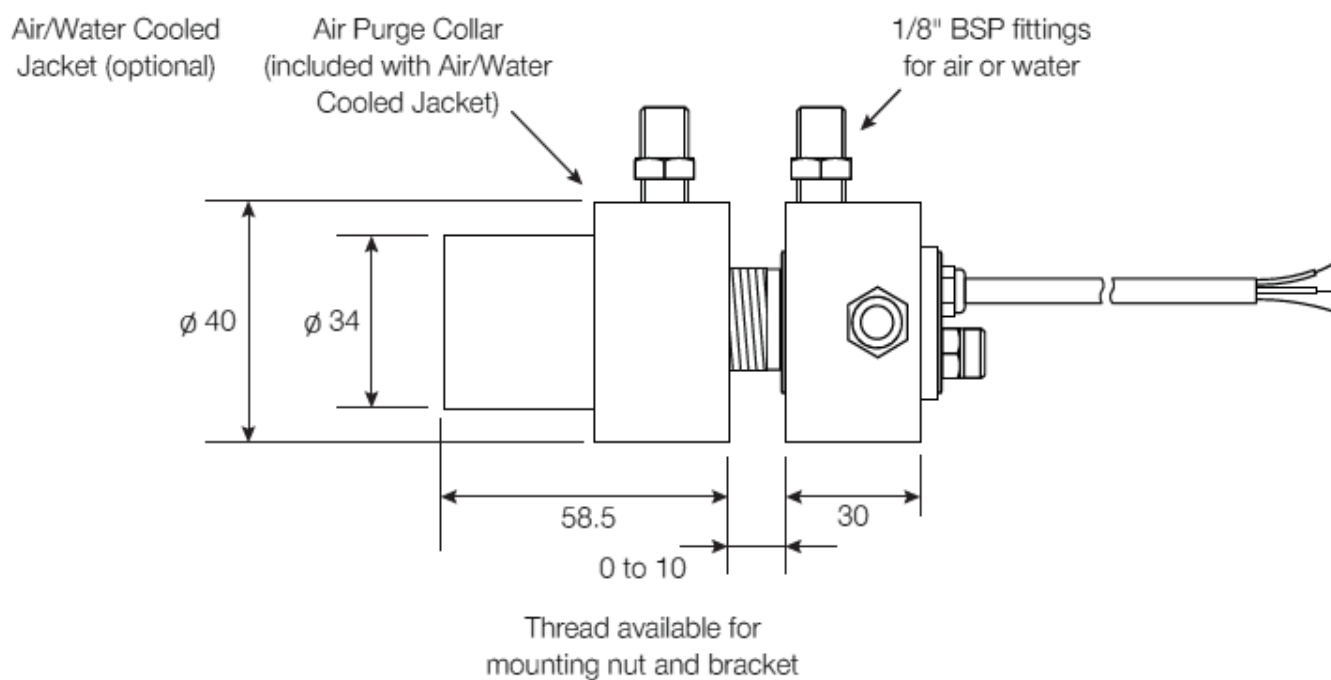
- 4-20 mA output temperature scale



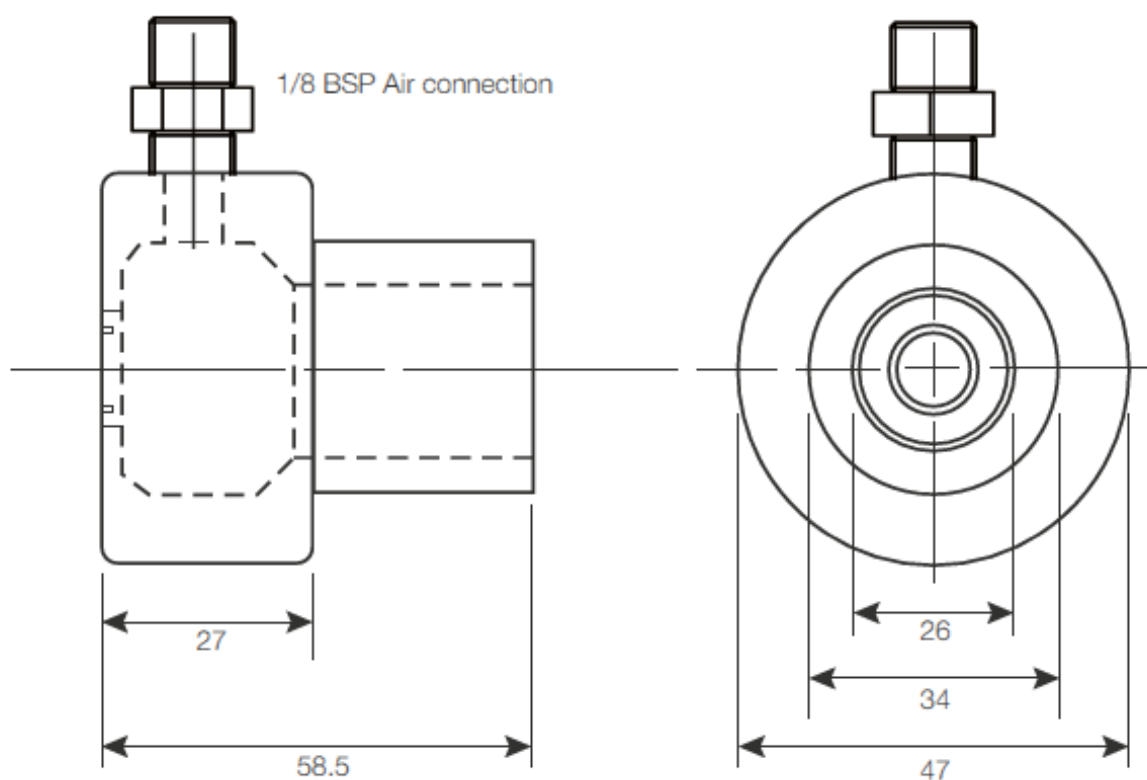
UNIT DIMENSIONS



AIR/WATER COOLED HOUSING DIMENSIONS

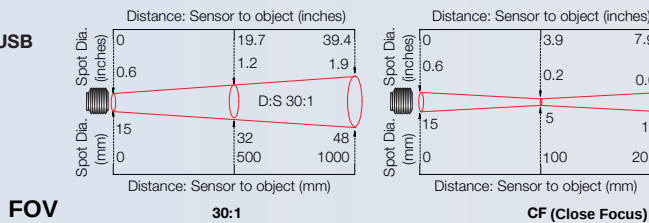


AIR PURGE DIMENSIONS

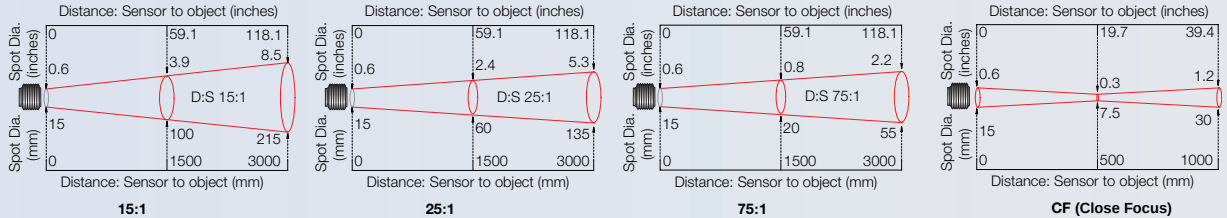


OPTICS Diameter of target spot measured versus distance from sensing head (90% energy)

PSC-IR-USB models:



PSC-IR-USB 2.2 models:



GENERAL SPECIFICATIONS

	PSC-IR-USB Dull Surface Targets	PSC-IR-USB 2.2 Reflective Metal Targets
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	2-wire, 4 to 20 mA (linear with temperature)	4 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	≤ 200 ms (90% response)	
Spectral Range	8 to 14 μm	2.2 μm
Power Requirement	6 to 28 VDC	
Sensor Voltage	6 V DC minimum	11 V DC minimum
Max Loop Impedance	900 Ω @ 24 V DC	
Maximum Span	Full temperature range	
Minimum Span	100°C	

* Object temperature > T_{min} (see graph of Minimum Measurable Temperature)

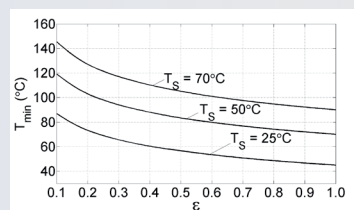
MECHANICAL

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 (PSC-IR15LT2.2 only)



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

ACCESSORIES



OTHER ACCESSORIES

Extended 4-20 mA output cable (30 m max):

- for PSC-IR-USB models without cooling **PSC-PUACE**
- for high-temperature PSC-IR-USB models with (WJ) cooling **PSC-PUACEHT**
- Protective plastic window with stainless steel holder for PSC-IR-USB models **PSC-PWL**
- 3-point calibration certificate **PSC-CALCERT**
- Fixed mounting bracket **PSC-FBL**

MODEL NUMBERS - 8-14 μm Wavelength

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

MODEL NUMBERS - 2.2 μm Wavelength

PSC-IR-USBxx xx 2.2 xx	
Cooling	(blank) = Uncooled sensor
WJ	Air/water cooled jacket with air purge collar
Temperature range	
LT	= 45 to 300 °C (PSC-IR-USB-15LT2.2 only)
PT	= 100 to 400 °C (PSC-IR-USB-15PT2.2 only)
MT	= 250 to 1000 °C
HT	= 450 to 2000 °C
Field of view	
15	= 15:1 divergent optics (PSC-IR-USB15LT or PT)
25	= 25:1 divergent optics (PSC-IR-USB25MT or HT)
75	= 75:1 divergent optics (PSC-IR-USB75MT or HT)
CF	= Close-focus optics (focal spot size 7.5 mm at 500 mm distance) (PSC-IR-USB-CFMT or HT)

Process Sensors

787 Susquehanna Ave, Franklin Lakes, NJ 07417 USA

Tel: 774-399-0461

E-mail: irtemp@processsensors.com // Online: www.processsensorsIR.com



Updated: 9/15/22

Specifications subject to change without notice