

# Boiler / Furnace Pyrometer

## PSC *Metis* Model MY46

### For Temperature Measurement of Visibly Clear Hot Gases or Flames Containing CO<sub>2</sub>

The PSC model *Metis* MY46 pyrometer with pyroelectric detector, measures in a narrowband wavelength centered at 4.6 $\mu$ m. At this optimum selected wavelength, the Process Sensors Model MY46 measures Hot CO<sub>2</sub> gas, which is a constituent of an oxygenated flame.

A standard temperature measurement range of **932° to 2732°F (500 to 1500°C)** is available, managing most boiler applications. PSC also provides other temperature ranges up to 3272°F.

#### Co2 Gas Measurement Operation:

The infrared radiation emitted from the gas stream is collimated onto the IR detector via the sensor's lens. The acquired temperature reading is the average from the IR sensor's cone of vision which penetrates up to 12 foot into the boiler. This is generally based on an 8 to 12% CO<sub>2</sub> gas concentration. The heavy duty protective cooling housing with air purge insures reliable operation in the most severe environments.

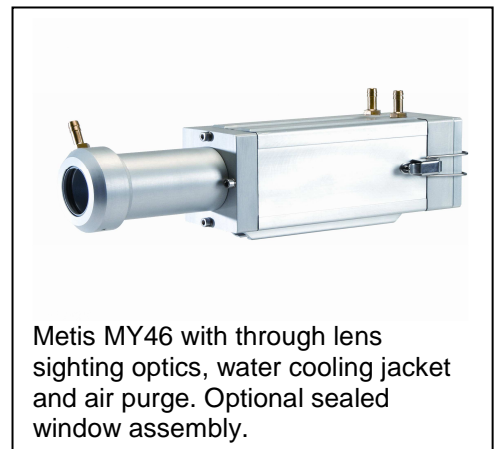
**Applications include: Garbage Incinerators, Hazardous Waste boilers, Fluidized bed boilers, Utility Boilers, Kilns, Furnaces etc.**

#### Optical Alignment:

Located at the rear of the pyrometer, sight-through optics allow the operator to visually see into the boiler / furnace, enabling observation of any debris build up that may be lodged in the IR sensor's sight tube, such as coal fly ash. It is important that the pyrometers' field of view or cone of vision is kept unobstructed. The protective housing with flange and steel sight tube offers a ½ air purge inlet that is used to reliably maintain a clear sight path.

#### Output Signals:

The PSC *Metis* Pyrometer offers a variety of analog and digital output signals for displaying, controlling and archiving of the measured process temperatures. The analog outputs can be switched from 0 to 20mA or 4 to 20 mA. There is a choice of 2 digital communication interfaces, either **RS232** or **RS485** with a maximum of 19.2 kBd.



Metis MY46 with through lens sighting optics, water cooling jacket and air purge. Optional sealed window assembly.

### Software Program:

The included PSCwin Software enables the user to set all IR sensor parameters such as temperature range, speed of response, emissivity etc., as well as storing and transferring the temperature data to programs such as excel. **It is recommended** to dampen the sensor's response speed to 10 seconds to "smooth out" the large combustion temperature excursions that occur during the process. In addition through our experience, longer response speeds of 30 to 60 seconds should be applied to the users receiving instrumentation i.e. PLC, HMI or DCS system.

### Software Compatibility:

Notebook or PC with 500 MHz clock frequency and Windows 95, 98, ME, XP, Vista or Windows 7 operating system.

### Pyrometer Specifications:

Measurement Range	932 to 2732°F // 500 to 1500°C
Measurement Uncertainty	1°C + 0.5% of difference between measured and housing temp. ( $T_a = 23^\circ\text{C}$ , $\epsilon = 1$ , $t_{90} = 10\text{s}$ )
Repeatability	0.1% of measured temperature in °C + 0.2°C ( $T_a = 23^\circ\text{C}$ , $\epsilon = 1$ , $t_{90} = 10\text{s}$ )
Response Time $t_{90}$	100 ms adjustable up to 10 s
Output Signal	0 / 4 – 20 mA selectable, max. Load: 500 $\Omega$
Emissivity Range:	0.20 – 1.00
Temperature Resolution	analog: < 0.1% adjusted temperature range, digital: 0.1°C
Ambient Temperature	pyrometer: operation: 0 to 70°C, storage: -20 to 80°C
Power Supply	24 V AC/DC (15 to 30 V AC / DC), AC: 48 to 62 Hz, max. 2.5 VA
Isolation	power supply, analog and digital outputs are galvanically isolated from each other and from the housing
Housing and Rating	extruded aluminium profile, IP 65 per DIN 40 050
Weight	700 g
CE Label	according to EU directives for electromagnetic compatibility (EMC)

### The IR Sensor System Package:

#### Accessories: Water-Cooled Jacket KG10-00

for ambient temperature up to 200°C, includes air purge accessory



Basic protective housing for *Metis* pyrometer.  
A variety of hardware accessories are available.

### Process Sensors Corporation

Non-Contact Infrared  
Temperature Measurement  
787 Susquehanna Ave  
Franklin Lakes, N.J. 07417  
Tel.: 201-485-8772, 8773  
Fax: 201-485-8770

[www.processsensorsIR.com](http://www.processsensorsIR.com)  
[lrtemp@processsensors.com](mailto:lrtemp@processsensors.com)

PSC is a company totally dedicated to customer support. Our customers, our partners, our products and our dedicated employees have built Process Sensors into the world class corporation it is today.