

Boiler / Furnace Pyrometers

Process Sensors Metis Models MY45 & MY46

Proven IR Technology for Hot CO₂ Gas or Flame Temperature

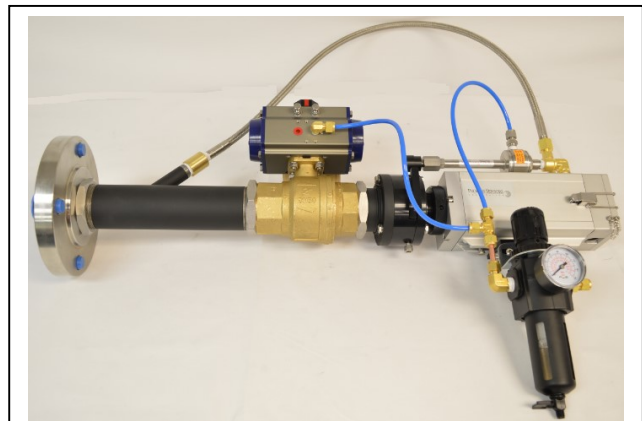
Process Sensors **Metis models MY45 & MY46** pyrometers measure temperature within the CO₂ Gas absorption band. By utilizing optimal wavelengths, the non-contact Infrared sensor measures Hot CO₂ gas or flame temperature.

Standard temperature measurement ranges for the model **MY45** are 212° to 2552°F (100° to 1400°C), and 572° to 2732°F (300° to 1500°C).

Minimum starting temperature ranges for the **MY46** are 932° to 2732°F (500 to 1500°C) or 1472° to 3632°F (800° to 2000°C) and handle most boiler applications. Consult PSC for non-standard temperature ranges.



IR Pyrometer



Metis MY45 /46 Series Protective Hardware Assembly Includes: Cooling Jacket, Removable sealed sapphire window, sight tube with strong air purge, flange, oil coalescent filter, air actuated ball valve & vortex cooler.

CO₂ Gas/ Flame 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 averaged from the IR sensor's cone of vision which penetrates up to 8 to 14 foot into the boiler/furnace. This is typically based on an 8 to 12% CO₂ gas concentration. The heavy-duty protective cooling jacket with protective sapphire window and air purge ensures reliable operation in harsh environments. In addition, in the event the air supply is shut off, the air actuated ball valve closes and protects the IR sensor's lens from being contaminated or damaged.

Applications include Utility Power Boilers, Garbage Incinerators, Hazardous Waste Boilers, Recovery Boilers, Fluidized Bed Boilers, Biomass Boilers, Kilns and Furnaces.

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 jacket's steel sight tube provides a 1/2" air purge inlet, which is used to reliably maintain a clear sight path.

Output Signals:

The PSC Metis MY45 / 46 Pyrometer series offer a variety of analog and digital output signals for displaying, controlling, and archiving of the measured process temperatures. The analog outputs are switchable from 0 to 20mA to 4 to 20 mA. There is a choice of 2 bi-directional digital communication interfaces, either **RS232** or **RS485** with a maximum baud rate of 19.2 k.

Software Program:

The included graphical SensorTools 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 temperature fluctuations that occur during the combustion process. Through our experience, longer response times of 30 to 60 seconds should be applied to the users receiving instrumentation i.e. PLC, HMI or DCS system, to provide additional signal averaging.

Software Compatibility:

Notebook or PC with 500 MHz clock frequency and Windows 7, 8 or 10 operating system.

Pyrometer Specifications:

Measurement Range	MY45: 212° to 2552°F (100° to 1400°C) or 572° to 2732°F (300° to 1500°C) MY46: 932° to 2732°F (500° to 1500°C) or 1472° to 3632°F (800° to 2000°C)
Measurement Uncertainty	± 0.5% of reading +1°C
Repeatability	± 0.1% of measured temperature in °C + 0.2°C (T _a = 23°C, ε = 1, t ₉₀ = 10 s)
Response Time t ₉₀	100 ms adjustable up to 10 seconds
Output Signal	4 to 20 mA and 0 to 20ma (switchable), max. Load: 500 Ω
Emissivity Range:	0.10 to 1.00
Temperature Resolution	analog: < 0.1% of adjusted temperature range, digital: 0.1°C
Ambient Temperature Rating	pyrometer operation without cooling jacket: 0 to 70°C, storage: -20 to 80°C
Power Supply	24 VDC nominal (18 to 30 VDC operation)
Isolation	power supply, analog and digital outputs are galvanically isolated from each other and from the housing
Housing and Rating	extruded anodized aluminium profile, IP 65 per DIN 40 050
Weight (IR sensor only)	1.54 lbs., (700 g)
CE Label	according to EU directives for electromagnetic compatibility (EMC)

The IR Sensor System Package:

Basic Protective Hardware Package:

Assembly includes Water-Cooled Jacket KG10-00 for ambient temperature up to 200°C, removable sapphire sealed window, sight tube with strong air purge and flange.



A variety of hardware accessories are available.

Process Sensors Corporation
 Non-Contact Infrared Temperature Measurement Division.
 787 Susquehanna Ave
 Franklin Lakes, N.J. 07417
 Tel.: 774-399-0461
 Email : IRtemp@processsensors.com
www.processSensorsIR.com

KPM Analytics
 8 Technology Drive
 Westborough, MA 01581
 Tel.: 774-399-0500
 Email : IRtemp@kpmanalytics.com