



**TELEDYNE**  
*Analytical Instruments*  
A Teledyne Technologies Company



# PEM 9004

Portable Emissions Analyzer

---

# PEM 9004 Portable Emissions Analyzer

---

The PEM 9004 is a stack gas analyzer capable of detecting and calculating up to ten (10) gas parameters, housed in a light-weight and robust case. An integral sample pump draws a sample through the included 316SS probe and gas treatment system built in to the case. The analyzer utilizes microprocessor-based electronics with a back-lit LCD display and membrane panel to provide easy-to-view readings and navigation of functions.

## Features

- IP67 rated waterproof and chemical resistant case with vent valve
- Rechargeable battery with up to 40 hours continuous use (adapter included)
- Thermal printer with easy paper loading
- Large back-lit LCD display can show up to ten (10) readings at a time
- Easy to use menu options
- Electronic functions include hold, min/max, zoom, search, and unit conversion
- Gas measurement units: %-vol, mg/m<sup>3</sup>, mg/kWh, and mg/MJ
- Pressure measurement units: hPa, mbar, psi, mmH<sub>2</sub>O, inches H<sub>2</sub>O, mmHg, inches Hg
- Selectable fuel type as a calculation factor
- Status bar provides device and system information
- Analyzer performs individual sensor self-diagnostics
- USB data interface
- Certified to EN 50379-2

## Measured Parameters

- Oxygen (O<sub>2</sub>)
- Carbon Monoxide (CO) (H<sub>2</sub> - compensated)
- Nitrogen Oxide (NO) - optional
- Sulfur Dioxide (SO<sub>2</sub>) - optional
- Flue gas temperature
- Ambient temperature
- Differential temperature
- Differential pressure

## Calculated Parameters

- Carbon Dioxide (CO<sub>2</sub>)
- NO<sub>x</sub>
- CO – undiluted
- Boiler efficiency (Eta)
- Waste gas losses (qA)
- Excess air value (Lambda)



---

# Technical Specifications

---

## GAS MEASUREMENTS

### Oxygen (O<sub>2</sub>) Measurement

Range: 0-25% vol  
Resolution: 0.1%

### Carbon Monoxide (CO) Measurement

Range: 0-4,000 ppm vol  
(H<sub>2</sub> – compensated)

Optional high range: 0-20,000 ppm  
Resolution: 1 ppm

### Nitrogen Oxide (NO) Measurement - Optional

Range: 0-2,000 ppm vol  
Resolution: 1 ppm

### Sulfur Dioxide (SO<sub>2</sub>) Measurement - Optional

Range: 0-2,000 ppm vol  
Resolution: 1 ppm

## TEMPERATURE MEASUREMENTS

### Flue Gas Temperature

Range: 0°C to 1000°C  
Resolution: 1°C  
Thermocouple: Type K

### Ambient Temperature

Range: -20°C to 100°C  
Resolution: 0.1°C  
Thermocouple: Type K

## PRESSURE MEASUREMENT

### Differential Pressure

Range: ±130 mbar  
Resolution: 0.01 hPa

## CALCULATED GAS MEASUREMENTS

### Calculated Carbon Dioxide (CO<sub>2</sub>)

Range: 0 to CO<sub>2</sub> max vol parameter  
Resolution: 0.1% vol

## INSERTION PROBE

Probe material: 316SS  
Length: 300mm (12in.) standard,  
other lengths available  
Thermocouple: K-type

## PHYSICAL CHARACTERISTICS

Weight: Approx. 3 kg  
Dimensions: 275mm W x 115mm H x 250mm D  
(10.83in. W x 4.53in. H x 9.84in. D)

## GAS TREATMENT FOR PEM-9004

### Maintenance Advice

Please note the patented “water stop” on the gas treatment system. In order to provide maximum protection for the PEM-9004 measuring system the following parts should be replaced in when necessary:

- 09 Teflon membrane
- 07 Infiltec fine filter

We recommend that you purchase a stock of these spares together with the instrument.



## TAI Representative



## Warranty

Sensors are warranted for 1 year against defects in material or workmanship.

NOTE: Specifications and features will vary with application. The above are established and validated during design, but are not to be constructed as test criteria for every product. All specifications and features are subject to change without notice.



**TELEDYNE**  
*Analytical Instruments*

A Teledyne Technologies Com-

16830 Chestnut Street

City of Industry, California 91748, USA

Tel: 626-934-1500 or 888-789-8168

Fax: 626-934-1651

Email: [ask\\_tai@teledyne.com](mailto:ask_tai@teledyne.com)

Website: [www.teledyne-ai.com](http://www.teledyne-ai.com)