

## PORTABLE GAS ANALYZER

**A COMPLETE, VERSATILE, MULTI-FUNCTIONAL PORTABLE GAS ANALYZER FOR INSTANT AND ACCURATE DATA**

### PA - 2400 MULTI GAS ANALYZER

Compact, Portable construction and simplicity of operation makes ENDEE Portable Gas Analyzer a valuable aid for insitute use in constantly changing measurement sites.

Its versatile modular design permits configuration and upgradation to suit specific needs. You determine the number of Sensors for your instrument from (1 to 8) or should your analyzer have a built-in printer or RS 232 Output or a smoke test probe so you pay only for what you need.



**WITH OPTIONS TO USE PC INTERFACE, DATA LOGGER, INTEGRAL PRINTER, DATE AND TIME  
IDEAL USE FOR LABORATORY AND PLANT**

The highly upgradable PA - 2400 model can be AC Powered and/or Battery operated. It may include a chargeable battery, battery charger, Sampling Probe with condensate trap and an inline Micro Filter and an inbuilt Sampling Pump.

It can be built to include upto 8 nos. of Gas Sensors and Temperature Sensor, Draft / Pressure besides the calculated parameters and have options of :

1. Data Logger      2. Integral Printer      3. RS - 232 Output
4. Date & Time      5. Facility for Automatic analysis for specified periods at preset intervals.

Self check of components and functions by special software ensures perfect functioning of the unit, thereby accurate analysis data. Any unacceptable deviation from the standard stored values is displayed as an indication " FAULT".

Instant Printout (with Time and Date) confirms the displayed readings that have been measured and calculated at the point of test. The instrument may also be instructed to sample and analyze for specified periods at preset intervals completely unattended.

## SPECIAL FEATURES

- Portable, Compact and Rugged
- Complete Automatic Operation
- Backlit Graphic LCD displays messages and values through the operation of the analyzer
- Standard Fuels with their parameters are pre-programmed.
- Inbuilt Buzzer announces various stages of operation
- A mere Six key to operate the complete instrument
- Visual alarms for Low Bat, Flow Fault
- Automatic sampling & Analysis for specified periods at preset intervals
- Completely unattended

## SAMPLE TREATMENT

- A condensate, Dust Trap and low porosity in line filter to condition the sample.
- Time Tested, Sturdy, High Suction inbuilt Pump.
- Proven Sensor Technology : Special purpose long life Sensors with cross interference filters to achieve high accuracy.
- Oxygen Sensor guaranteed for 4 years and other Electrochemical Sensor for 2 years.
- Calculated Values for NOX, Fuel Efficiency, CO<sub>2</sub> & Excess Air.
- Volumetric (PPM), Quantitative (mg/m<sup>3</sup>) analysis of desired parameters with print-outs confirming displayed readings.
- Customized Versions - Heated & other special probes and accessories available to measure and match customers special requirements.

## DATA TREATMENT

- Complete & Instant Analysis of Data :  
The processor digitally processes, displays and logs the data instantly.
- A real time clock and memory.
- Automatic Sampling and analysis for specified period at preset intervals.
- Digital interface RS 232.
- Date and time stamp.
- Data can be printed on demand or transmitted through a serial interface to an external personal computer for further analysis.
- A normal Paper Impact type Printer to document the analysis results and time reference.
- Continuous and stable Automatic Display of concentrations ensures accuracy and stability.
- Instant & easy to read display of combustion, Emission or Process Analysis Data.

## APPLICATIONS

- Ambient and Emissions Monitoring
- Stack or Exhaust Gas Analysis in Boilers
- Power & Industrial Plants
- Process Analysis
- Fuel Efficiency
- Internal Combustion Engines
- Furnaces
- Quality Control Labs



GA - 152 CONNECTED TO A PC

## SPECIFICATIONS

|                              |   |
|------------------------------|---|
| Display                      | : Graphic LCD   |
| Sampling                     | : Inbuilt Sampling Pump   |
| Response Time                | : Sensor Dependent  |
| Power Supply                 | : 110 V or 220 V & AC Ni-cad battery pack with integral charger |
| Operating Temperature        | : 0 to 55°C   |
| Probe Length                 | : 600 mm (MOC - SS) length standard (900 & 1200 mm optional)    |
| Probe Diameter               | : 8mm (12mm optional)   |
| Connection Hose (Probe Unit) | : 2.0 meters, special lengths on demand                         |
| Battery Life                 | : 6 Hours continuous operation                                  |
| Printer                      | : Impact type 24 columns  |
| Alarms                       | : Visual and audible, 4 Alarms                                  |
| Case                         | : Aluminium   |
| External Dimensions          | : 280 x 210 x 185 mm  |
| Weight                       | : < 5 kg with batteries (approximately)                         |
| Interference Filters         | : Provided with Sensors   |
| Line Filter                  | : Replaceable 5 microns   |
| Accessories                  | : Moisture Trap   |
| Pre-programmed Fuels         | : Light & Heavy Diesel Oil, Gas, Coal, Furnace Oil, Wood        |
|                              | Special Fuels - preprogrammed on request                        |

## MEASURING RANGES

|    | PARAMETERS                   | SENSORS                        | RANGES  | RESOLUTION   | ACCURACY |
|----|------------------------------|--------------------------------|---|--------------|----------|
| 1  | O2                           | Electrochemical / Paramagnetic | a) 0 - 2 % b) 25 % c) 100 %                         | 0.1 %        | ± 0.5 %  |
| 2  | CO                           | Electrochemical                | 0 - 200, 4000 PPM, 10 %                             | 1 PPM, 0.1 % | ± 2 %    |
| 3  | CO Sensor compensated for H2 | Infrared                       | 5000 PPM, 5 %, 20 %, 50 %, 100 %                    | 1 PPM        | ± 2 %    |
| 4  | CO2                          | Electrochemical                | a) 0 - 200, b) 4000 PPM                             | 1 PPM        | ± 2 %    |
| 5  | CO2                          | Calculated                     | 0 - 25 %, 99.9 %                                    | 0.1 %        | ± 2 %    |
| 6  | NO                           | Thermal Conductivity           | 0 - 99.9 %  | 0.1 %        | ± 2 %    |
| 7  | NO2                          | Infrared                       | 1000 PPM, 2000 PPM, 5000 PPM, 1 %, 5 %, 25 %, 100 % | 1 PPM        | ± 2 %    |
| 8  | NOX                          | Electrochemical                | 0 - 1999, 5000 PPM                                  | 1 PPM        | ± 2 %    |
| 9  | SO2                          | Infrared                       | 3000 PPM, 1 %, 5 %, 25 %, 100 %                     | 1 PPM        | ± 2 %    |
| 10 | CxHx                         | Electrochemical                | 0 - 100, 1000 PPM                                   | 1 PPM        | ± 2 %    |
|    | Ch4                          | Electrochemical / Infrared     | 0 - 1999, 5000 PPM                                  | 1 PPM        | ± 2 %    |
| 11 | Excess Air (A)               | Electrochemical                | 0 - 20, 1999 PPM                                    | 1 PPM        | ± 2 %    |
| 12 | Temp. Air (Ambient)          | Infrared                       | 2000 PPM, 8000 PPM, 5 %, 30 %, 100 %                | 0.1 % 0.01   | ± 2 %    |
| 13 | Temp. Gas                    | Catalytic pellistor            | 0 - 100 % LEL                                       | 0.1 %        | ± 2 %    |
| 14 | Temp. Differential           | Thermal Conductive             | 0 - 30 % & 0 - 100 %                                | 0.1 %        | ± 2 %    |
| 15 | Pressure / Draft / DIFF      | Infrared                       | 100 %   | 0.01 m/s     | ± 0.5 %  |
| 16 | Gas Velocity                 | Calculated                     | 1 to INFINITY                                       | 1°C          | ± 0.25 % |
| 17 | Efficiency / Stack Los       | Semi conductor                 | 0 - 99 °C   | 1°C          | ± 2 %    |
| 18 | Smoke                        | Tc. K.                         | 0 - 1600 °C   | 1°C          | ± 2 %    |
| 19 | H2S                          | Calculated                     | 0 - 1300 °C   | 0.01         | ± 2 %    |
| 20 | CL2, BR2, F2                 | Bridge                         | +/- 20 WG   | 0.1 m/s      | ± 2 %    |
| 21 | HCL / HBr / HF / HCN         | Pitot Tube                     | 0 - 99.9 m/s  | 0.1 %        | ± 2 %    |
| 22 | H2                           | Calculated                     | 1 - 99.9 %  | 0.1 %        | ± 2 %    |
| 23 | Toxic (Organics)             | Paper Filter Method            | 0 - 9 Bachrach Scale                                | 0.1 %        | ± 2 %    |
| 24 | NH3                          | Electrochemical                | 0 - 500 PPM   | 1 PPM        | ± 2 %    |
| 25 | Ethylene Oxide               | Electrochemical                | 0 - 200 PPM   | 1 PPM        | ± 2 %    |
| 26 | Phosphine / Arsine           | Electrochemical                | 0 - 100 PPM   | 0.1 PPM      | ± 2 %    |
| 27 | Phosgene                     | Electrochemical                | 0 - 2000 PPM  | 1 PPM        | ± 4 %    |
| 28 | VOC                          | Electrochemical                | 0 - 5 %   | 0.1 %        | ± 2 %    |
| 29 | C2H2 Acelelen                | Catalytic / Combustion         | 0 - 100 %   | 1 PPM        | ± 2 %    |
| 30 | C2H4 Ethelyne                | Thermal Conductive             | 0 - 100 %   | 1 PPM        | ± 2 %    |
| 31 | Propane                      | Solid State/                   | 0 - 10, 2000 PPM                                    | 1 PPM        | ± 2 %    |
| 32 | N2O                          | Electrochemical / PID          | 0 - 100, 1000 PPM                                   | 1 PPM        | ± 2 %    |
| 33 | H2O                          | Electrochemical                | 0 - 100 PPM   | 0.1 PPM      | ± 2 %    |
|    |                              | Electrochemical                | 0 - 1 PPM   | 0.01 PPM     | ± 2 %    |
|    |                              | Electrochemical                | 0 - 5 PPM   | 1 PPM        | ± 2 %    |
|    |                              | PID/Solid state                | 0 - 100 / 2000 PPM                                  | 1 PPM        | ± 2 %    |
|    |                              | Infrared                       | 0 - 20 VOL % 0-1000 PPM                             | 1 PPM        | ± 2 %    |
|    |                              | Infrared                       | 0 - 20 VOL % 0-1000 PPM                             | 1 PPM        | ± 2 %    |
|    |                              | Infrared                       | 0 - 20 VOL % 0-1000 PPM                             | 1 PPM        | ± 2 %    |
|    |                              | NDIR                           | 0 - 1000 PPM  | 1 PPM        | ± 2 %    |
|    |                              | Capacitive                     | 0 - 100 % RA  | 0.1 PPM      | ± 2 %    |

Note : Images shown are indicative only. Specifications and Features will vary with application. There may be changes overtime due to continuous development process.  
@ 2018



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