

# AMPRO 2000

## POWERFUL HANDHELD Combustion / Emission Analyzer

for industrial combustion and  
emission measurements



since 1984 ®

AIR fair

EMISSION MONITORING SYSTEMS

Over 30 years of innovative gas analysis!

- With up to 6 true gas measurements
- Up to 15 hours operation / Lithium-Ion battery
- Low cost of ownership
- Extremely user friendly
- +4 Years O2 sensor Life Expectancy
- Active CO sensor protection

# THE MOST POWERFUL HANDHELD GAS ANALYZER

MRU Online View software for trending and data export



Large, backlit condensate separator with PTFE filter



Color 3.5" TFT display with zoom function



6 measurement values per customizable screen

|                        |      |
|------------------------|------|
| Program 1, Network gas |      |
| O2                     | 2.0  |
| CO2                    | 10.7 |
| CO                     | 500  |
| NO                     | 30   |
| NO2                    | 3    |
| NOx                    | 33   |
| stop                   | show |

IR - wireless speed printer



## Simultaneous measurements of up to 6 gas components!

- O<sub>2</sub>, CO, CO<sub>2</sub>, NO, NO<sub>2</sub>, SO<sub>2</sub>, CO-high, & CO-very high
  - Up to 5 electrochemical sensors, plus CO<sub>2</sub> NDIR bench is possible!
  - Low CO, NO and NO<sub>2</sub> ranges are available
- Emission calculations such as mass flow, calculated or True NO(x), plus O<sub>2</sub> referencing to user defined values
- Gas temperature measurement up to 2,012°F (use stainless steel up to 1,200°F, use Inconel tubes up to 2,012°F)
- Large condensate separator with PTFE (Teflon) coated filter
- Air purging pump for CO-sensor protection
- Internal data storage for up to 16,000 measurements!
- High energy Li-Ion battery provides up to 15 hours operation time
- Large color graphic, backlit display with zoom function
- Customizable screen settings
- Durable and dirt resistant keypad
- IR interface for external printer (printer is optional)
- Integrated SD card reader for additional memory and easy data handling

### Also measures...

- Combustion air temperature
- Stack gas temperature
- Stack draft
- Differential pressure
- Differential temperature

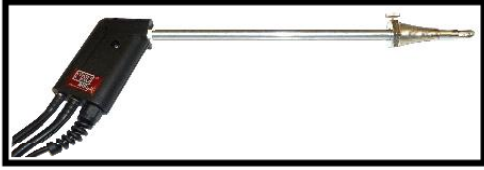
### And calculates...

- CO<sub>2</sub>
- CO/CO<sub>2</sub> ratio
- Dew point
- Excess air and air ratio (Lambda)
- Combustion efficiency
- Heat losses



# Combustion / Emission Analyzer

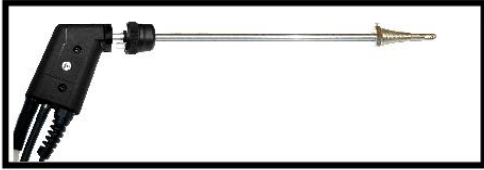
## PROBES AND PROBE TUBES



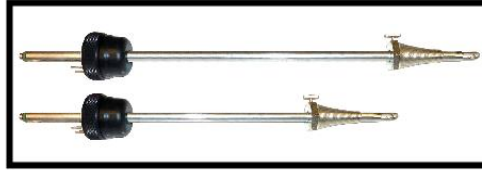
Standard probe: 10" insertion;  
9' rugged, braided sheathed sampling line with  
K-Type t/c (1,200°F max) and silicone hose  
for combustion applications



High temp ceramic probe (3,000°F)  
Without temperature measurement



Industrial probe for interchangeable probe  
tubes with 9' or 16' rugged, braided sheathed  
sampling line with K-Type t/c and Viton hose  
for combustion and emission measurements

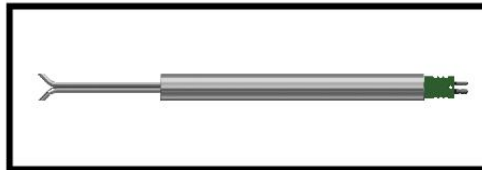


Probe tubes (4" to 80" long)  
in SS (1,200°F) or Inconel (2,000°F)  
Also available with sintered metal filter



L-Type SS with or without K-Type t/c  
In sizes from 4" (0.12"Ø) to 79" (0.47"Ø)

## PITOT TUBES



S-Type SS with K-Type t/c (59" lead) and 1.1"Ø  
protection tube  
Available in 19" or 39" lengths (0.31"Ø)

IR-Printer interface

Blue-Tooth interface

High capacity, easy access  
condensate separator

Rear magnets for  
hands free operation

Durable, dirt resistant  
keypad

AUX port for additional  
parameters (OPTIONAL)

SD Card reader for data transfer  
and additional storage

USB Ports for data transfer  
and battery charging

3.5" color display  
with zoom function

Intuitive, easy to navigate  
menu structure

Secure grip side panels

Fiberglass reinforced  
enclosure

K-Type temperature  
sockets

Stainless steel  
connectors



Exchangeable probe tubes for 1,200°F to 2,000°F

Sintered metal filter

Industrial probe handle with 9' or 16' sampling line

HC leak detection probe (requires AUX output option)

Transport case - available in 2 different sizes

## TECHNICAL SPECIFICATIONS

|                            |                                                                                                                                                                                                                       |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AMPRO 2000 analyzer</b> | Handheld analyzer with up to 5 electrochemical sensors and a single or dual gas NDIR bench                                                                                                                            |
| <b>Fuel types</b>          | Natural gas, propane, butane, #2, #5, & #6 light oils, heavy oil, kerosene, distillate #1, diesel, coal, coal anthracite & bituminous, wood (dry, 10%, 20%, 30%, & 40% M.), pellets, and four user defined fuel types |

| Measurement components  |                                              | Measuring range                                    | Accuracy                                                           |
|-------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------|
| O <sub>2</sub>          | Oxygen                                       | 0 ... 21.0 Vol-%                                   | ± 0.2 Vol-% abs.                                                   |
| CO                      | Carbon monoxide (H <sub>2</sub> compensated) | 0 ... 4,000 ppm<br><b>overload 20,000ppm *</b>     | ± 10 ppm or<br>5 % reading < 4,000 ppm / 10 % reading > 4,000 ppm  |
| CO                      | Carbon monoxide low                          | 0 ... 500 ppm<br><b>with 0.1 ppm resolution **</b> | ± 2.0 ppm or ** 5 % reading                                        |
| CO                      | Carbon monoxide very high                    | 0 ... 4.0%<br><b>overload 10.0% *</b>              | ± 0.02% or<br>5 % reading < 0.4% / 10 % reading > 0.4%             |
| NO                      | Nitric oxide                                 | 0 ... 1,000 ppm<br><b>overload 5,000ppm *</b>      | ± 5.0 ppm or<br>5 % reading < 1,000 ppm / 10 % reading > 1,000 ppm |
| NO                      | Nitric oxide low                             | 0 ... 300 ppm<br><b>with 0.1 ppm resolution **</b> | ± 2.0 ppm or ** 5 % reading                                        |
| NO <sub>2</sub>         | Nitrogen dioxide                             | 0 ... 200 ppm<br><b>overload 1,000ppm *</b>        | ± 5 ppm or<br>5 % reading < 200 ppm / 10 % reading > 200 ppm       |
| NO <sub>2</sub>         | Nitrogen dioxide low                         | 0 ... 100 ppm<br><b>with 0.1 ppm resolution **</b> | ± 2.0 ppm or ** 5 % reading                                        |
| SO <sub>2</sub>         | Sulfur dioxide                               | 0 ... 2,000 ppm<br><b>overload 5,000ppm *</b>      | ± 10 ppm or<br>5 % reading < 2,000 ppm / 10 % reading > 2,000 ppm  |
| CO <sub>2</sub>         | Carbon dioxide                               | single NDIR<br>0.....40%                           | ± 0.3 % or 5% reading                                              |
| CO <sub>2</sub><br>CxHy | Carbon dioxide<br>Hydrocarbons               | dual NDIR<br>0.....40%<br>100....40,000ppm         | ± 0.3 % or 5% reading                                              |

\*overload range recommend only for short time measurements

\*\*are not separate sensors; selected sensors are used with special calibration

|                                   |                                                                        |                                         |
|-----------------------------------|------------------------------------------------------------------------|-----------------------------------------|
| Stack / Flue gas temperature      | 0 ... 1,200°F / 2,012°F<br>(with stainless steel / Inconel steel tube) | ± 4°F ... < 392°F / 1 % reading > 392°F |
| Primary-air / Ambient temperature | 0 ... 212°F                                                            | ± 2°F                                   |
| Differential temperature          | up to 2,012°F<br>(with suitable material of sampling tube)             | ± 4°F ... < 392°F / 1 % reading > 392°F |
| Stack / Differential pressure     | +/- 40 inH <sub>2</sub> O (100hPa)                                     | ± 0.01 inH <sub>2</sub> O or 1% reading |
| Gas flow velocity measurement     | 1 ... 40 m/s (using Pitot tube)                                        |                                         |

### Calculated values (fuel type dependent)

|                            |                            |                          |            |
|----------------------------|----------------------------|--------------------------|------------|
| Carbon dioxide             | 0 ... CO <sub>2</sub> max. | Air Ratio (Lambda)       | 1 ... 9.99 |
| Heat losses q <sub>A</sub> | 0 ... 99.9 %               | Excess Air               | 0 ... 99.9 |
| Efficiency                 | 0 ... 100 % / 120 %        | CO/CO <sub>2</sub> ratio | 0 ... 10   |

### General specifications

|                       |                                                                                    |
|-----------------------|------------------------------------------------------------------------------------|
| Operation temperature | 41°F .... 113°F, max. 95 % RH, none condensing                                     |
| Storage temperature   | -4°F ..... 122°F                                                                   |
| Ambient conditions    | not in aggressive, corrosive or high dust ambience, not for use in hazardous areas |
| Power supply          | Lithium-Ion battery, 15 h operation, (with NDIR 6 to 8 hours)                      |
| Grid power supply     | 100 - 240 V AC / 50 ... 60 Hz 1A                                                   |
| Protection class      | IP42                                                                               |
| Weight                | approx. 2.2 lbs. (with 7 sensors)                                                  |
| Dimensions            | ( W x H x D) 4.3" x 8.8" x 2.04"                                                   |

Data subject to change without notice

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