

# 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 O<sub>2</sub> 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, Natural gas	
O2 (%)	20.5
CO2 (%)	0.3
CO (ppm)	500
NO (ppm)	5
NO2 (ppm)	0
NOx (ppm)	5
stop clear > clipboard	

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

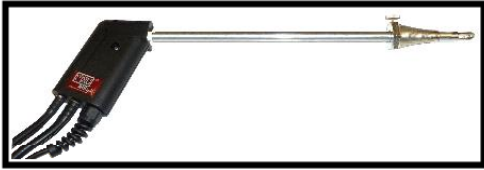
### And calculates...

- 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

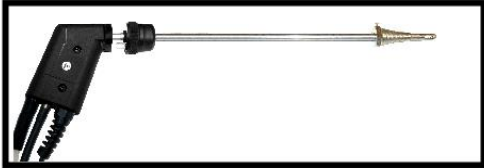
## PROBES AND PROBE TUBES



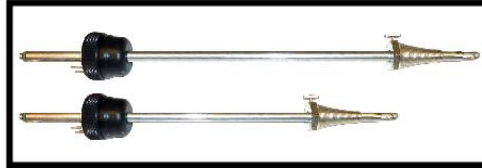
Standard probe: 10" insertion;  
9' rugged, braided sheathed sampling line with  
K-Type t/c (1,200°F max) and silicone hose  
for combustion applications



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

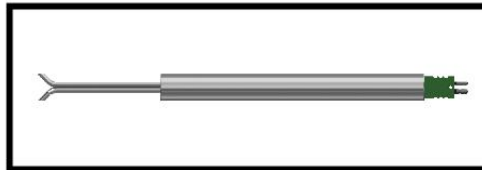


Probe tubes (4" to 80" long)  
in SS (1,200°F) or Inconel (2,000°F)  
Also available with sintered metal filter



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

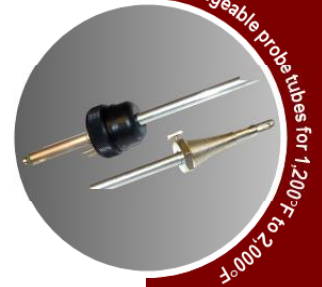
Intuitive, easy to navigate  
menu structure

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 <b>overload 20,000ppm *</b>	± 10 ppm or 5 % reading < 4,000 ppm / 10 % reading > 4,000 ppm
CO	Carbon monoxide low	0 ... 500 ppm <b>with 0.1 ppm resolution **</b>	± 2.0 ppm or ** 5 % reading
CO	Carbon monoxide very high	0 ... 4.0% <b>overload 10.0% *</b>	± 0.02% or 5 % reading < 0.4% / 10 % reading > 0.4%
NO	Nitric oxide	0 ... 1,000 ppm <b>overload 5,000ppm *</b>	± 5.0 ppm or 5 % reading < 1,000 ppm / 10 % reading > 1,000 ppm
NO	Nitric oxide low	0 ... 300 ppm <b>with 0.1 ppm resolution **</b>	± 2.0 ppm or ** 5 % reading
NO <sub>2</sub>	Nitrogen dioxide	0 ... 200 ppm <b>overload 1,000ppm *</b>	± 5 ppm or 5 % reading < 200 ppm / 10 % reading > 200 ppm
NO <sub>2</sub>	Nitrogen dioxide low	0 ... 100 ppm <b>with 0.1 ppm resolution **</b>	± 2.0 ppm or ** 5 % reading
SO <sub>2</sub>	Sulfur dioxide	0 ... 2,000 ppm <b>overload 5,000ppm *</b>	± 10 ppm or 5 % reading < 2,000 ppm / 10 % reading > 2,000 ppm
CO <sub>2</sub>	Carbon dioxide	single NDIR 0.....40%	± 0.3 % or 5% reading
CO <sub>2</sub> CxHy	Carbon dioxide Hydrocarbons	dual NDIR 0.....40% 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 (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 (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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