

AMPRO 2000

POWERFUL HANDHELD Combustion / Emission Analyzer

for industrial combustion and
emission measurements



O₂

CO

CO₂

NO

NO₂

NO_x

SO₂

°F

Δ°F

ΔP

Draft

Pres-
sure

Flow



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

O2	2.0
CO2	10.7
CO	500
NO	30
NO2	3
NOx	33

IR - wireless speed printer



Simultaneous measurements of up to 6 gas components!

- O₂, CO, CO₂, NO, NO₂, SO₂, CO-high, & CO-very high
 - Up to 5 electrochemical sensors, plus CO₂ NDIR bench is possible!
 - Low CO, NO and NO₂ ranges are available
- Emission calculations such as mass flow, calculated or True NO(x), plus O₂ 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...

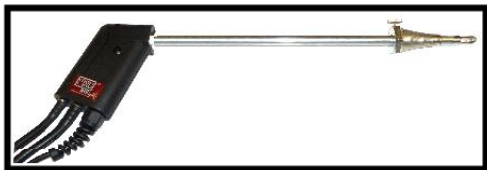
- Combustion air temperature
- Stack gas temperature
- Stack draft
- Differential pressure
- Differential temperature

And calculates...

- CO₂
- CO/CO₂ ratio
- Dew point
- Excess air and air ratio (Lambda)
- Combustion efficiency
- Heat losses

Combustion / Emission Analyzer

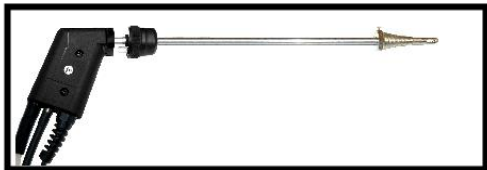
PROBES AND PROBE TUBES



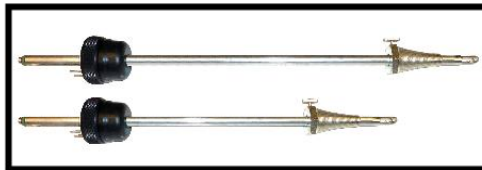
Standard probe: 10" insertion;
9' rugged, braided sheathed sampling line with
K-Type t/c (1,200°F max) and silicone hose
for combustion applications



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

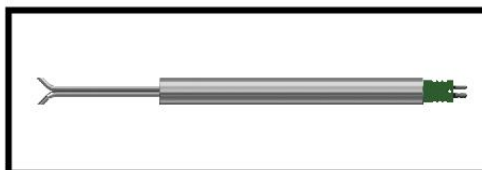


Probe tubes (4" to 80" long)
in SS (1,200°F) or Inconel (2,000°F)
Also available with sintered metal filter



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

PITOT TUBES



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

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

AMPRO 2000 analyzer	Handheld analyzer with up to 5 electrochemical sensors and a single or dual gas NDIR bench
Fuel types	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 ₂	Oxygen	0 ... 21.0 Vol-%	± 0.2 Vol-% abs.
CO	Carbon monoxide (H ₂ compensated)	0 ... 4,000 ppm overload 10,000ppm *	± 10 ppm or 5 % reading < 4,000 ppm / 10 % reading > 4,000 ppm
CO	Carbon monoxide low	0 ... 500 ppm with 0.1 ppm resolution **	± 2.0 ppm or ** 5 % reading
CO	Carbon monoxide very high	0 ... 4.0% overload 10.0% *	± 0.02% or 5 % reading < 0.4% / 10 % reading > 0.4%
NO	Nitric oxide	0 ... 1,000 ppm overload 5,000ppm *	± 5.0 ppm or 5 % reading < 1,000 ppm / 10 % reading > 1,000 ppm
NO	Nitric oxide low	0 ... 300 ppm with 0.1 ppm resolution **	± 2.0 ppm or ** 5 % reading
NO ₂	Nitrogen dioxide	0 ... 200 ppm overload 1,000ppm *	± 5 ppm or 5 % reading < 200 ppm / 10 % reading > 200 ppm
NO ₂	Nitrogen dioxide low	0 ... 100 ppm with 0.1 ppm resolution **	± 2.0 ppm or ** 5 % reading
SO ₂	Sulfur dioxide	0 ... 2,000 ppm overload 5,000ppm *	± 10 ppm or 5 % reading < 2,000 ppm / 10 % reading > 2,000 ppm
CO ₂	Carbon dioxide	single NDIR 0.....40%	± 0.3 % or 5% reading
CO ₂	Carbon dioxide	dual NDIR	± 0.3 % or 5% reading
CxHy	Hydrocarbons		

*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 ₂ O (100hPa)	± 0.01 inH ₂ O or 1% reading
Gas flow velocity measurement	1 ... 40 m/s (using Pitot tube)	

Calculated values (fuel type dependent)

Carbon dioxide	0 ... CO ₂ max.	Air Ratio (Lambda)	1 ... 9.99
Heat losses q _A	0 ... 99.9 %	Excess Air	0 ... 99.9
Efficiency	0 ... 100 % / 120 %	CO/CO ₂ 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