

# AMPRO 2000

## THE MOST POWERFUL HANDHELD GAS ANALYZER



Simultaneous measurement of  
up to **7** gas components



since 1984®

AIRfair

EMISSION MONITORING SYSTEMS



# AMPRO 2000

## THE MOST POWERFUL HANDHELD GAS ANALYZER

Suitable for emission monitoring of combustions and industrial processes

### Functions of the AMPRO 2000

- >> Simultaneous measurements of up to 7 gas components!  
E.g. O<sub>2</sub>, CO, NO, NO<sub>2</sub>, NO(x), SO<sub>2</sub>, CO-high, CO-very high,  
Up to 6 electrochemical sensor configurations are possible!  
Plus additional NDIR bench with CO<sub>2</sub>
- >> Emission calculations including: mg/m<sup>3</sup>, NO(x) as mg/m<sup>3</sup> NO<sub>2</sub>, true measurement of NO(x) = NO + NO<sub>2</sub>, including O<sub>2</sub> referencing (normalization) to user definable 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 (up to 15 hours operation time / with NDIR approx. 6 to 8 hrs.)
- >> Color backlit 3.5" TFT 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 data storage and data transfer to PC

### Continuous analysis of:

O<sub>2</sub> long-life (0...21.0 Vol.-%)  
CO H<sub>2</sub>-compensated (0 ... 4,000 / Overload 10,000 ppm)  
Combustion air temperature (short plug included)  
Stack gas temperature  
Stack pressure  
Differential pressure  
Differential temperature

### Combustion calculations (fuel type dependent):

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

### Interfaces:



**USB:**  
Data transfer  
Battery charging



**SD Card:**  
4 GB  
Data memory



**IR:**  
For external printer

### OPTIONAL \*



**Bluetooth\*:**  
Data transfer  
for Android  
and iOS



**AUX\*:**  
For additional  
external sensors

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**FLUE GAS**  
measurement



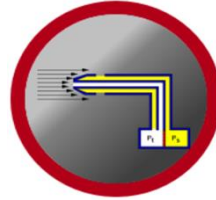
**TEMPERATURE**  
measurement



**PRESSURE**  
measurement



**FLOW - SPEED**  
measurement



**GAS LEAKAGE**  
detection



**SPEED PRINTER**  
external



**PROBES**  
and hoses

MRU offers a wide range of probes and hoses of all kind of applications  
Standard probes for up to 1200°F  
Industrial probes for up to 3000°F



**PROBE TUBES**  
are available between  
4" and 80"

**Top Connections**  
SD Card reader  
USB Port  
IRDA/BlueTooth



Active CO Sensor protection  
using 2nd internal pump

3.5" TFT Color Display with ZOOM function  
Customizable

Menu guided software and function keys

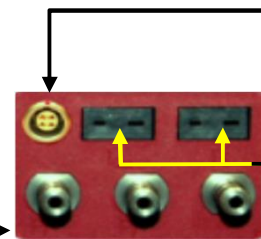
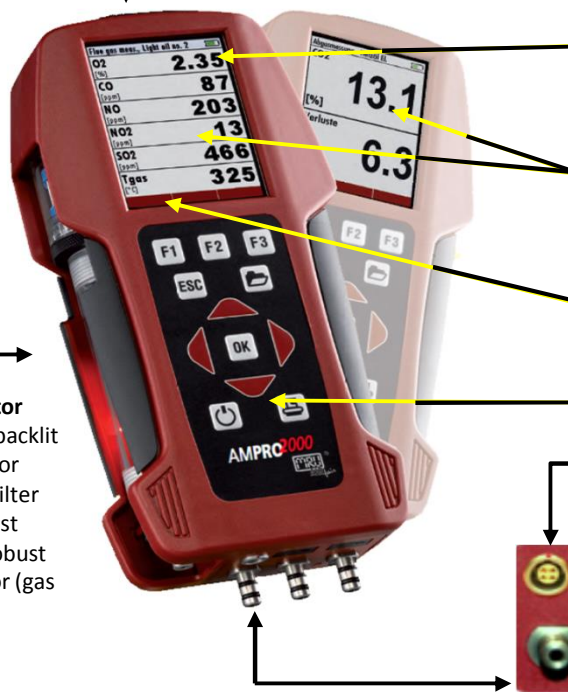
User friendly, dirt and moisture  
resistant key pad

**AUX**  
universal auxiliary socket,  
for connection of  
HC or CO gas detector,  
other pressure, temperature  
external sensors

**K-type** temperature

**Robust stainless steel** connectors  
for draft and pressure

**Condensate separator**  
Effective, high volume, backlit  
condensate separator  
with reusable Teflon filter  
for protection against  
dirt and soiling, with robust  
stainless steel connector (gas  
port)



# AMPRO 2000

## TECHNICAL SPECIFICATIONS

DATA SUBJECT TO CHANGE WITHOUT NOTICE

**AMPRO 2000 analyzer** Handheld analyzer with up to 6 electrochemical sensors and a single or dual gas NDIR bench  
**Fuel types** Natural gas, liquid gas, oil light, pellets, wood, coal, user-definable fuels

Measurement components		Measuring range	Accuracy
O2	Oxygen	0 ... 21.0 Vol-%	± 0.2 Vol-% abs.
CO	Carbon monoxide (H2 compensated)	0 ... 4,000 ppm <b>overload 10,000ppm *</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
NO2	Nitrogen dioxide	0 ... 200 ppm <b>overload 1,000ppm *</b>	± 5 ppm or 5 % reading < 200 ppm / 10 % reading > 200 ppm
NO2	Nitrogen dioxide low	0 ... 100 ppm <b>with 0.1 ppm resolution **</b>	± 2.0 ppm or** 5 % reading
SO2	Sulfur dioxide	0 ... 2,000 ppm <b>overload 5,000ppm *</b>	± 10 ppm or 5 % reading < 2,000 ppm / 10 % reading > 2,000 ppm
CO2	Carbon dioxide	single NDIR 0.....40%	± 0.3 % or 5% reading
CO2	Carbon dioxide	dual NDIR 0.....40%	± 0.3 % or 5% reading
CxHy	Hydrocarbons	dual NDIR 100....40,000ppm	

\*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 inH2O (100hPa)	± 0.01 inH2O or 1% reading
Gas flow velocity measurement	1 ... 40 m/s (using Pitot tube)	

### Calculated values (fuel type dependent)

Carbon dioxide	0 ... CO2 max.	<b>Air Ratio (Lambda)</b>	1 ... 9.99
Heat losses qA	0 ... 99.9 %	<b>Excess Air</b>	0 ... 99.9
Efficiency	0 ... 100 % / 120 %	<b>CO/CO2 ratio</b>	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"

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