



AMPRO^{plus}

A class of its own - Handheld
Combustion / Emission Analyzer

O₂ | CO₂ | CO | NO_x | NO | NO₂ | SO₂ | C_xH_y

ΔP | ΔT | Flow | BTU | Gas Leak





The new generation of gas analysis

Making a proven concept even better - NEW HIGHLIGHTS

- High resolution display providing more information with detailed graphics
- Illuminated condensate trap and water-stop
- WLAN network connectivity
- Easy Bluetooth connection to the powerful MRU4U App or printer



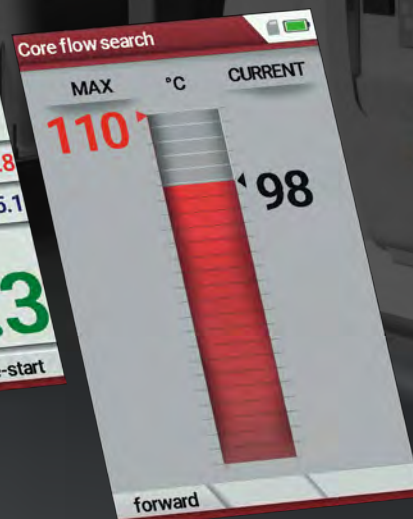
Flue gas Measurement screen with graphics



Optional internal flow monitoring



Differential temperature measurement screen



Stack sweet spot locator

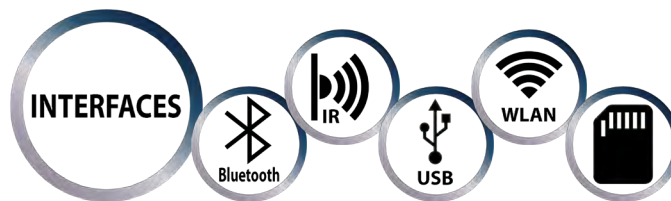
A proven design, a modern re-imagining

Proven features setting the bar for high value analyzers:



Large, illuminated condensate trap with water stop filter

- Up to 7 gas parameters, plus temperature, pressure, and flow
- +4yr Long-life O₂ sensor
- Active CO sensor protection
- Powerful Li-ion battery provides up to 20hrs of operating time
- Extensive probe selection



Rear magnets for hand free operation

Mini USB interface for data transfer and battery charging

Bluetooth™ for data transfer or device remote control

Robust, fiber reinforced enclosure

Large, illuminated condensate trap

Compact enclosure 4.33" x 8.85" x 2.05" (W x L x H) +/- 2lbs.

Optional, additional AUX port to connect a gas detector and other external sensors



IR interface for external Speed printer

SD card reader

Super bright, 4" color display with graphics for many applications

Intuitive, menu guided operation

Soft, anti-slip side panels

Durable, dirt resistant keypad

K-Type temperature ports Temperature & Differential Temperature measurement

Stainless steel ports for flue gas measurement and pressure



TECHNICAL DETAILS



Measurement component	Measuring range	Resolution	Accuracy
O ₂ Oxygen (Long Life)	0 ... 21%	0.1 %	± 0.2 Vol-% abs.
CO Carbon monoxide (H ₂ Compensated)	0 ... 10,000 / 20,000 ppm *	1 ppm	± 10 ppm or 5 % reading < 4,000 ppm / 10 % reading > 4,000 ppm
CO Carbon monoxide (low)	0 ... 500 **	0.1 ppm	± 2.0 ppm or 5 % reading
CO Carbon monoxide (high)	0 ... 40,000 / 100,000 ppm *	1 ppm	± 0.02% or 5 % reading < 0.4% / 10 % reading > 0.4%
NO Nitric oxide	0 ... 1,000 / 5,000 ppm *	1 ppm	± 5 ppm or 5 % reading < 1,000 ppm / 10 % reading > 1,000 ppm
NO Nitric oxide (low)	0 ... 300 **	0.1 ppm	± 2.0 ppm or 5 % reading
NO ₂ Nitric dioxide	0 ... 200 / 1,000 ppm *	1 ppm	± 5 ppm or 5 % reading up to 200 ppm or 10 % reading up to 1.000 ppm**
NO ₂ Nitric dioxide (low)	0 ... 300 **	0.1 ppm	
SO ₂ Sulfur dioxide	0 ... 2,000 / 5,000 ppm *	1 ppm	± 10 ppm or 5 % reading up to 2.000 ppm or 10 % reading up to 5.000 ppm**
SO ₂ Sulfur dioxide (low)	0 ... 300 **	0.1 ppm	

1-gas NDIR bench	Measuring range	Resolution	Accuracy
CO ₂ Carbon dioxide	0 ... 40 Vol %	0.1 %	± 0.3 % or 5 % of the measured value***

2-gas NDIR bench	Measuring range	Resolution	Accuracy
CO ₂ Carbon dioxide	0 ... 40 Vol %	0.1 %	± 0.5 % or 5 % of the measured value***
CxHy Hydrocarbons	100 ... 40,000 ppm	10 ppm	± 400 ppm or 5% reading***

Other measured components	Measuring Range	Resolution	Accuracy
Stack / Flue gas temperature	32 ... 1,472°F (0 ... 800°C) with stainless steel 32 ... 2,012°F (0 ... 1100°C) with Inconel	1 °F	± 4°F ... < 392°F / 1 % reading > 392°F ± 4°F ... < 392°F / 1 % reading > 392°F
Primary air / Ambient air temperature	32 ... 212°F (0 ... 100 °C)	1°F	± 2°F
Differential temperature	Up to 2,012°F (0 ... 1100°C)	1°F	± 4°F ... < 392°F / 1 % reading > 392°F
Stack draft	+/- 40 inH ₂ O (100hPa)	1 Pa	± 0.02 inH ₂ O or 1% reading
Differential pressure	+/- 80 inH ₂ O (200hPa)	1 Pa	± 0.02 inH ₂ O or 1% reading
Gas flow velocity measurement	3 ... 100 m/s (using Pitot tube)	0.1 m/s	

Calculated values	Range	Calculated values	Range	Calculated values	Range
Carbon dioxide	0 ... CO ₂ max.	Efficiency	0 ... 120 %	Excess Air	0 ... 99.9
Heat losses qA	0 ... 99.9 %	Air Ratio (Lambda)	1 ... 9.99	CO/CO ₂ ratio	0 ... 10

GENERAL SPECIFICATIONS	
Max suction range gas pump / Typical gas flow	150 hPa / 50 l/h
Internal memory	32,000 data sets
Data transmission / Interfaces	USB, Bluetooth, WLAN / USB, Bluetooth, WLAN, IRDA, SD CARD
Display	4" color display
Operation temperature / Storage temperature	+5°C ... +45 °C / 41 °F ... 113 °F / -20°C ... +50°C / -4°F ... 122°F
Ambient conditions	95% Rel. Humidity, non-condensing
Internal Battery Pack / Grid power supply	Li-Ion, 20h operation time / 100 - 240 V / 5V DC / 1200 mA
Protection class	IP30
Dimensions / Weight	4.3" x 8.8" x 2.04" (244x113x54 mm) / 1.65 lbs. (750g)
TÜV approval	TBD

Subject to change without notice / * short term overload / ** this is not a separate sensor-this is an a software option with special calibration / *** whichever is larger