MRU INSTRUMENTS

AMPRO plus

A class of its own - Handheld Combustion / Emission Analyzer

O_2 | CO_2 | CO | NOx | NO | NO_2 | SO_2 | CxHy

ΔP | ΔT | Flow | BTU | Gas Leak

AMPRO plus

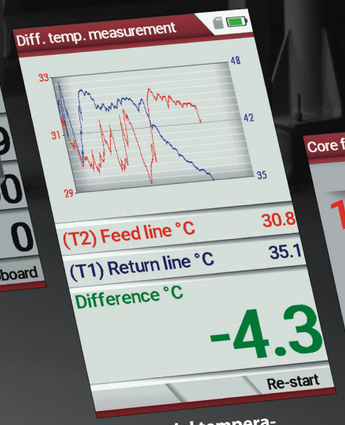
The new generation of gas analysis

Making a proven concept even better - NEW HIGHLIGHTS

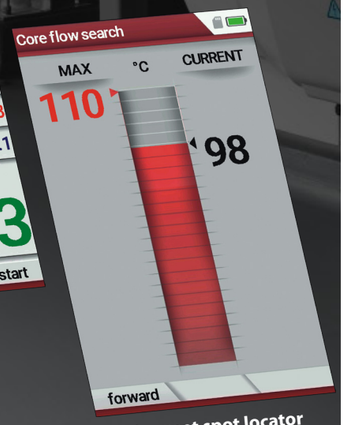
- High resolution display providing more information with detailed graphics
- Illuminated condensate trap and water-stop
- WLAN network connectivity
- Easy Bluetooth connection to the powerful MRU4U App or printer

Flue gas Measurement screen with graphics

Optional internal flow monitoring



Differential temperature measurement screen



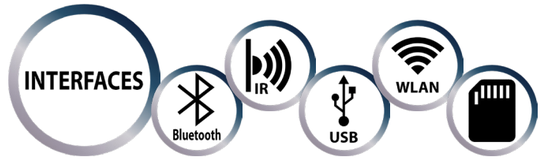
Stack sweet spot locator

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 and pressure measurement

AMPRO plus

TECHNICAL DETAILS

Measurement component		Measuring range	Resolution	Accuracy
O_2	Oxygen (Long Life)	0 … 21%	0.1 %	± 0.2 Vol-% abs.
CO	Carbon monoxide (H2 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	± 2.0 ppm or 5 % reading ***
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	± 2.0 ppm or 4 % reading ***

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 inH2O (100hPa)	1 Pa	± 0.02 inH2O or 1% reading
Differential pressure	+/- 80 inH2O (200hPa)	1 Pa	± 0.02 inH2O 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	EN 50379-1 and 2, ByRgG 280

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

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