

EMISSION MONITORING SYSTEM

Over 30 years of innovative gas analysis!

PORTABLE EMISSIONS ANALYZER

for industrial combustion / emissions tuning, compliance reporting or trouble-shooting



- Simultaneous measurement of up to 8 gases
- Automatic calculations and data logging
- Easy operation via intuitive Remote Control Unit
- Rugged design for extreme field conditions
- Accuracy and reliability on numerous applications

Built to do more...













BASE Unit:

Measuring O₂, CO, CO₂, NO, NO₂, SO₂, CO-high, & CO-very high, Stack temperatures up to 2000°F

Draft pressure to ±40"

- Emission calculations of mass flow, calculated or True NO(x), plus O2 referencing to user defined values
- Combustion calculations of CO2, CO/CO2 ratio, Excess air, Air ratio, Dewpoint, Efficiency & Heat losses
- Large condensate separator with PTFE coated filter
- High energy Li-lon battery provides up to 20 hours operation time
- Built-in speed printer with easy paper loading for quick on-site documentation
- Compact and rugged transport case

Options:

- Gas conditioning via high efficiency Peltier gas cooler
- CO protection with fresh air pump and cut off valve
- Internal sample flow monitoring
- Auto zeroing

Remote Control Units (RCU)

BASIC RCU:

- Bluetooth communication with base unit
- Large color graphic, backlit display with zoom function
- Simple, intuitive operation customizable screen settings
- Durable and dirt resistant keypad
- 16,000 measurement internal data storage
- High energy Li-lon battery provides up to 30 hours operation time
- Wireless battery charging via Base Unit cradle
- USB interface
- SD card reader for additional memory and easy data handling
- Optional Wireless PC interface via Bluetooth

Additional features of the COMFORT RCU:

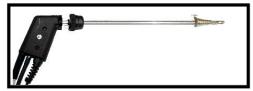
- Integrated Manometer for differential pressure and flow
- Differential Temperature inputs
- Auxiliary (AUX) input for optional HC or humidity probe

Software Options:

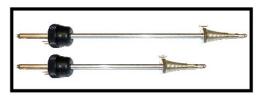
- MRU Online View Software for real-time monitoring and reporting
- MRU 4 U Application for iOS and Android SMART devices

Customized for your needs

PROBES AND PROBE TUBES



Industrial probe for interchangeable probe tubes with 9' or 16' rugged, braided sheated sampling line 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





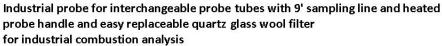






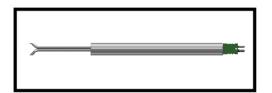


High temp ceramic probe (3,000°F) Without temperature measurement

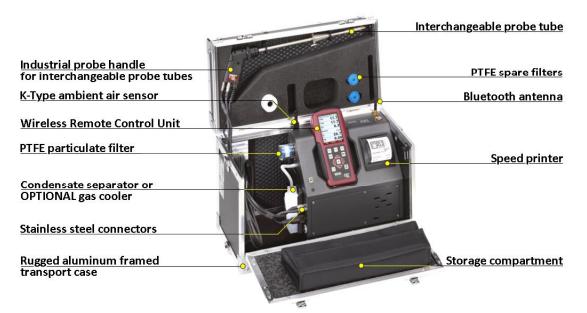




L-Type SS with or without K-Type t/c in sizes from 4" (0.12Ø) to 79" (0.47 Ø)



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)



PITOT TUBES



TECHNICAL SPECIFICATIONS

NOVAplus	analyzer
Fuel types	

Portable analyzer with up to 5 electrochemical sensors and 3 gas NDIR bench 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

Mea	surement components	Measuring range	Accuracy
O ₂	Oxygen	0 21.0 Vol-%	± 0.2 Vol-% abs.
CO	Carbon monoxide	0 4,000 ppm	± 10 ppm or
	(H2 compensated)	overload 10,000ppm *	5 % reading < 4,000 ppm / 10 % reading > 4,000 ppm
co	Carbon monoxide	0 500 ppm	± 2.0 ppm or** 5 % reading
	low	with 0.1 ppm resolution **	
CO	Carbon monoxide	0 4,000 ppm	± 20 ppm or
	high	overload 20,000ppm *	5 % reading < 4,000 ppm / 10 % reading > 4,000 ppm
co	Carbon monoxide	0 40,000 ppm	± 0.02% or
	very high	overload 100,000ppm *	5 % reading < 0.4% / 10 % reading > 0.4%
NO	Nitric oxide	0 1.000 ppm	± 5 ppm or
		overload 5,000ppm *	5 % reading < 1,000 ppm / 10 % reading > 1,000 ppm
NO	Nitric oxide	0 300 ppm	± 2.0 ppm or** 5 % reading
	low	with 0.1 ppm resolution **	
NO ₂	Nitrogen dioxide	0 200 ppm	± 5 ppm or
		overload 1,000ppm *	5 % reading < 200 ppm / 10 % reading > 200 ppm
NO ₂	Nitrogen dioxide	0 100 ppm	± 2.0 ppm or** 5 % reading
	low	with 0.1 ppm resolution **	
SO ₂	Sulfur dioxide	0 2,000 ppm	± 10 ppm or
		overload 5,000ppm *	5 % reading < 2,000 ppm / 10 % reading > 2,000 ppm
H ₂ S	Hydrogen sulfide	0 200 ppm	± 5 ppm or 5 % reading up to 500 ppm
		overload 2,000ppm *	10 % reading up to 2,000 ppm
CO ₂	Carbon dioxide single NDIR	040%	± 0.3 Vol-% abs. or 5% reading
co	CO Carbon monoxide 3 Gas NDIR	010,000ppm up to 10%	± 0.03% or ±3% of reading
CO ₂	Carbon dioxide 3 Gas NDIR	03% up to 30%	± 0.5% or ±3% of reading
СхНу	Hydrocarbons as CH4 or 3 Gas NDIR	010,000ppm up to 3%	± 0.03% or ±3% of reading
СхНу	Hydrocarbons as C ₃ H ₈ 3 Gas NDIR	02,000ppm up to 5,000ppm	± 30 ppm or ±3% of 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°FF / 1 % reading > 392°F
Primary-air / Ambient temperature	0 212°F	± 2°F
Differential temperature	up to 2,012°F	± 4°F < 392°FF / 1 % reading > 392°F
	(with suitable material of sampling tube)	
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.	Air Ratio (Lambda)	1 9.99
Heat losses qA	0 99.9 %	Excess Air	0 99.9
Efficiency	0 100 % / 120 %	CO/CO2 ratio	0 10

General specifications

Protection class IP20 Weight Complete unit approx. 16.3lbs / RCU 0.88lbs	deneral specifications	
Ambient conditions Power supply - Base Unit - RCU Lithium-Ion battery, 20 h operation, (with gas cooler 10 h) - RCU Lithium-Ion battery, 30 h operation Grid power supply 100 - 240 Vac / 50 60 Hz / 5A Protection class IP20 Weight Complete unit approx. 16.3lbs / RCU 0.88lbs	Operation temperature	41°F 113°F, max. 95 % RH, none condensing
Power supply - Base Unit Lithium-Ion battery, 20 h operation, (with gas cooler 10 h) - RCU Lithium-Ion battery, 30 h operation Grid power supply 100 - 240 Vac / 50 60 Hz / 5A Protection class IP20 Weight Complete unit approx. 16.3lbs / RCU 0.88lbs	Storage temperature	-4°F 122°F
- RCU Lithium-lon battery, 30 h operation Grid power supply 100 - 240 Vac / 50 60 Hz / 5A Protection class IP20 Weight Complete unit approx. 16.3lbs / RCU 0.88lbs	Ambient conditions	not in aggressive, corrosive or high dust environments, not for use in hazardous areas
Grid power supply100 - 240 Vac / 50 60 Hz / 5AProtection classIP20WeightComplete unit approx. 16.3lbs / RCU 0.88lbs	Power supply - Base Unit	Lithium-lon battery, 20 h operation, (with gas cooler 10 h)
Protection class IP20 Weight Complete unit approx. 16.3lbs / RCU 0.88lbs	- RCU	Lithium-lon battery, 30 h operation
Weight Complete unit approx. 16.3lbs / RCU 0.88lbs	Grid power supply	100 - 240 Vac / 50 60 Hz / 5A
· · · · · · · · · · · · · · · · · · ·	Protection class	IP20
Dimensions Complete unit 18.5" x 9" x 12" (W x H x D) RCU 7.36" x 3.54" x 1.5"	Weight	Complete unit approx. 16.3lbs / RCU 0.88lbs
	Dimensions	Complete unit 18.5" x 9" x 12" (W x H x D) RCU 7.36" x 3.54" x 1.5"

Data subject to change without notice



Support and sales by: