NOVA plus

PORTABLE EMISSIONS ANALYZER

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

USB · SD · AUX · MRU 4U

O2 · CO · CO2 · NO · NO2 · NOx · SO2 · H2S · CH4 · C3H8 · °F · Δ°F · ΔP · Draft · Pres-sure · Flow

MRU AIR fair since 1984 ®

EMISSION MONITORING SYSTEMS

Over 30 years of innovative gas analysis!

- **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 O_2, CO, CO_2, NO, NO_2, SO_2, 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-Ion 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-Ion 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:

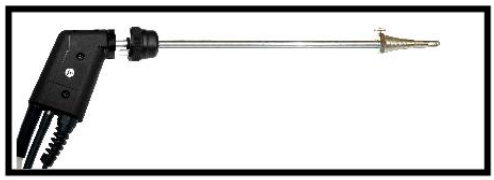
- Integrated Manometer for differential pressure and flow
- Differential Temperature inputs
- Auxiliary (AUX) input for optional HC or humidity probe

Software Options:

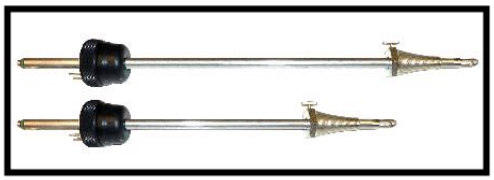
- MRU Online View Software for real-time monitoring and reporting
- MRU 4 U Application for iOS and Android SMART devices

Customized for your needs

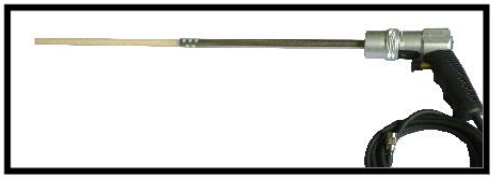
PROBES AND PROBE TUBES



Industrial probe for interchangeable probe tubes with 9' or 16' rugged, braided sheated sampling line and Viton hose
for combustion and emission measurements

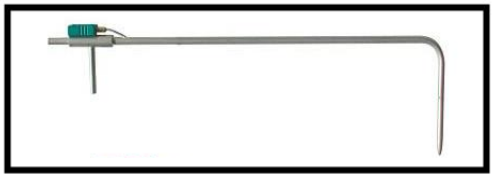


probe tubes (4" to 80" long)
in SS (1,200°F) or Inconel (2,000°F)
Also available with sintered metal filter



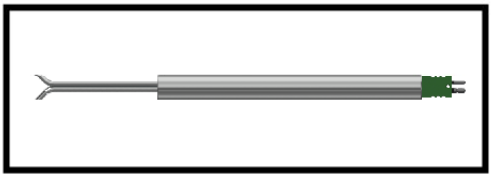
High temp ceramic probe (3,000°F)
Without temperature measurement

Industrial probe for interchangeable probe tubes with 9' sampling line and heated probe handle and easy replaceable quartz glass wool filter
for industrial combustion analysis



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

PITOT TUBES



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)

Industrial probe handle for interchangeable probe tubes

K-Type ambient air sensor

Wireless Remote Control Unit

PTFE particulate filter

Condensate separator or OPTIONAL gas cooler

Stainless steel connectors

Rugged aluminum framed transport case

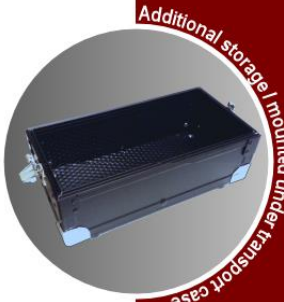
Interchangeable probe tube

PTFE spare filters

Bluetooth antenna

Speed printer

Storage compartment



NOVA plus

TECHNICAL SPECIFICATIONS

NOVAplus analyzer	Portable analyzer with up to 5 electrochemical sensors and 3 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 high		0 ... 4,000 ppm **overload 20,000ppm ***	± 20 ppm or 5 % reading < 4,000 ppm / 10 % reading > 4,000 ppm
CO	Carbon monoxide very high		0 ... 40,000 ppm **overload 100,000ppm ***	± 0.02% or 5 % reading < 0.4% / 10 % reading > 0.4%
NO	Nitric oxide		0 ... 1.000 ppm **overload 5,000ppm ***	± 5 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
H_2S	Hydrogen sulfide		0 ... 200 ppm **overload 2,000ppm ***	± 5 ppm or 5 % reading up to 500 ppm 10 % reading up to 2,000 ppm
CO_2	Carbon dioxide single NDIR		0.....40%	± 0.3 Vol-% abs. or 5% reading
CO	CO Carbon monoxide	3 Gas NDIR	0.....10,000ppm up to 10%	± 0.03% or ±3% of reading
CO_2	Carbon dioxide	3 Gas NDIR	0.....3% up to 30%	± 0.5% or ±3% of reading
CxHy	Hydrocarbons as CH_4 or	3 Gas NDIR	0.....10,000ppm up to 3%	± 0.03% or ±3% of reading
CxHy	Hydrocarbons as C_3H_8	3 Gas NDIR	0.....2,000ppm 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 **(with suitable material of sampling tube)**	± 4°F ... < 392°FF / 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 ... CO_2 max.	**Air Ratio (Lambda)**	1 ... 9.99
Heat losses qA	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 environments, not for use in hazardous areas
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
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

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