NOVA plus

COMPACT AND ROBUST MULTI-GAS ANALYZER WITH REMOTE CONTROL UNIT

Simultaneous measurement of up to **8** gas components

O_2 | CO_2 calc. | CO_2 meas. | CO | CO HIGH | NO | NO_2 | NO_x | SO_2 | H_2S | CH_4 C_3H_8

MRU AIR fair since 1984 ®

EMISSION MONITORING SYSTEMS

NOVAplus

WHENEVER YOUR ANALYZER NEEDS TO ACCOMPLISH MORE

Equipped with everything needed for commercial and industrial applications

Functions of the NOVAplus BASE UNIT

>> Simultaneous measurements of up to 8 gas components!
e.g. O2, CO, NO, NO2, NO(x), SO2, CO-high, CO-very high, H2S, CH4, C3H8
Up to 5 electrochemical sensor configurations are possible!
Plus additional 3 gas NDIR bench with CO2, CO-high, CH4 (C3H8).

>> Emission calculations including: mg/m^3, NO(x) as mg/m^3 NO2, true measurement of NO(x) = NO + NO2, including O2 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 / OPTIONAL gas cooler

>> Air purging pump for CO-sensor protection

>> Built-in speed printer with easy paper loading

>> Internal data storage for up to 16,000 measurements!

>> Battery and grid power operation:
High energy Li-Ion battery (up to 20 hours operation time / with gas cooler approx. 10 hrs.)
Wall-plug, universal grid power supply, 100-240Vac/50-60Hz / 12V dc

>> Compact and robust transport case

Functions of the NOVAplus RCU

>> Remote Control Unit (RCU) with OPTIONAL Differential Temperature and Differential Pressure measurement

>> Color backlit 3.5" TFT display

>> Durable and dirt resistant keypad

>> High energy Li-Ion battery (up to 30 hours operation time)

>> Inductive (wireless) charging of the RCU

Continuous analysis of:

O_2 long-life (0…21.0 Vol.-%)
CO H_2-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_2
CO/CO_2 ratio
Dew point
Excess air and air ratio (Lambda)
Combustion efficiency
Heat losses

Interfaces:

USB:
Data Transfer

SD Card:
4 GB
Data Memory

OPTIONAL *

Bluetooth*:
Data transfer

AUX*:
For additional external sensors

NOVAplus

WHENEVER YOUR ANALYZER NEEDS TO ACCOMPLISH MORE

Customized for your needs

FLUE GAS measurement

TEMPERATURE measurement

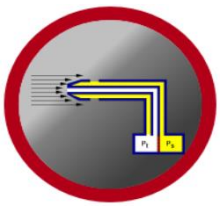
PRESSURE measurement

SOOT measurement

GAS LEAKAGE detection

HUMIDITY measurement

FLOW - SPEED measurement

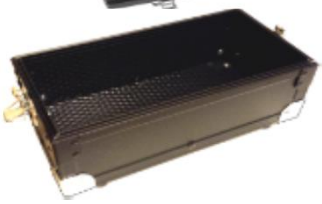


SPEED PRINTER built in

GAS COOLER low energy

SELF DIAGNOSIS software

The NOVAplus comes in a robust aluminum framed transport case



There is also an additional storage case available which will be attached under the main case

Inductive (wireless) charging of the RCU from the base unit

There are two RCU's available - the BASIC and the COMFORT.
Both have a USB port and SD card reader.

Both RCU's communicate with the base unit via Bluetooth.

The COMFORT unit has additional ports at the bottom for Temperature- Pressure measurements and can therefore be used as a stand-alone unit.

An additional Bluetooth module is available for communication to a PC.

NOVAplus

TECHNICAL SPECIFICATIONS

DATA SUBJECT TO CHANGE WITHOUT NOTICE

NOVAplus analyzer	Portable analyzer with up to 5 electrochemical sensors and 3 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 **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
NO2	**Nitrogen dioxide**		0 ... 200 ppm **overload 1,000ppm ***	± 5 ppm or 5 % reading < 200 ppm / 10 % reading > 200 ppm
NO2	**Nitrogen dioxide low**		0 ... 100 ppm **with 0.1 ppm resolution ****	± 2.0 ppm or** 5 % reading
SO2	**Sulfur dioxide**		0 ... 2,000 ppm **overload 5,000ppm ***	± 10 ppm or 5 % reading < 2,000 ppm / 10 % reading > 2,000 ppm
H2S	**Hydrogen sulfide**		0 ... 200 ppm **overload 2,000ppm ***	± 5 ppm or 5 % reading up to 500 ppm 10 % reading up to 2,000 ppm
CO2	**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
CO2	**Carbon dioxide**	**3 Gas NDIR**	0.....3% up to 30%	± 0.5% or ±3% of reading
CxHy	**Hydrocarbons as CH4 or**	**3 Gas NDIR**	0.....10,000ppm up to 3%	± 0.03% or ±3% of reading
CxHy	**Hydrocarbons as C3H8**	**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 ... 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

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"

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