



NOVA^{plus} EMI

Portable, multifunction
flue gas analyzer

O₂ | CO₂ | CO | NO_x | NO | NO₂ | SO₂ | CH₄ | C₃H₈ | H₂S

With wireless Remote Control Unit



NOVA^{plus} EMI

Your first choice for smart gas analysis

The combination of infrared measurement technology and electrochemical sensors ensures versatility and reliable analysis even for small measuring ranges. NOVAplus EMI – portable industrial emissions analyzer leading the industry in analysis and price

Simultaneous analysis of up to 8 exhaust gas components:

O₂ | CO₂ | CO | NO_x | NO | NO₂ | SO₂ | CH₄ | C₃H₈ | H₂S

We offer you these special advantages:

- Automatic measuring program with data recording
- Automatic zeroing for long-term measurements
- Lithium-ion battery operation



TÜV and MCERTS certified by SIRA for „portable systems“

The gases and measuring ranges

Gas	Method1	Measuring range min./max.	Note
O ₂	EC	0 ... 25 %	TÜV certified
CO	EC	0 ... 10,000/20,000	TÜV certified
CO	NDIR	0 ... 2,000 ppm/10.00 %	—
CO ₂	NDIR	0 ... 40.00 %	TÜV certified
CH ₄	NDIR	0 ... 2,000 ppm/4.00 %	—
C ₃ H ₈	NDIR	0 ... 2,000/20,000 ppm	—
NO	EC	0 ... 1,000/5,000 ppm	TÜV certified
NO ₂	EC	0 ... 200/1,000 ppm	TÜV certified
SO ₂	EC	0 ... 2,000/5,000 ppm	TÜV certified
H ₂ S	EC	0 ... 500/2,000 ppm	—

The device in detail

An overview of the special features



Remote Control Unit (RCU)
Slim, lightweight, with bright color 3.5" TFT display, wireless charging



Easy to use interfaces
SD card and Mini USB



High speed printer
built-in, prints graphics as well



Remote control unit in comfort edition also usable as a separate measuring instrument eg. for pressure, temperature, leakage detection and more



attachable compartment for accessories

The gas conditioning and sampling

An overview



Gas sampling probe for industrial combustions, unheated, without filter for short, complete emission monitoring including NO₂/SO₂, probe handle for exchangeable tubes, with 9 foot gas sampling line (VITON)



Heated gas sampling probe with heated sampling line, length 9 foot, 266°F temperature regulated Gas temperature measurement using K-type thermocouple. With heated, easy replaceable quartz wool filter.



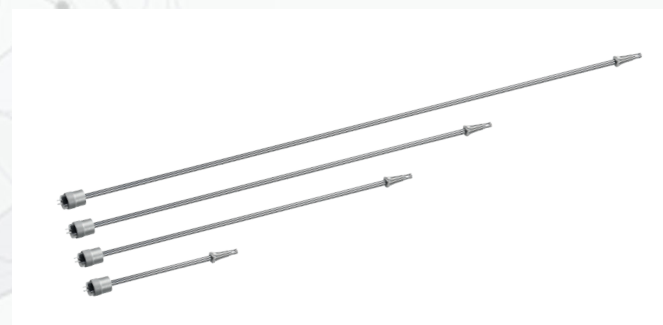
Gas sampling probe for industrial combustions, with heated probe handle and easily replaceable quartz glass wool filter for exchangeable tubes



Large, efficient **condensate separator** with PTFE (Teflon) coated filter



Peltier gas cooler (Option) comes with automatic condensate pump



Probe tubes in various lengths and materials for temperature ranges from 1,472 to 3,092°F

Practical accessories and options

For more flexibility and applications



Pitot tubes for flow velocity measurement

- L-type or S-type with temperature measurement
- (up to 1,000 °C), length: 300 ... 1,500 mm
- Measuring ranges from 3 to 100 m/s
- Additional calculation of the volume flow (m³/s)



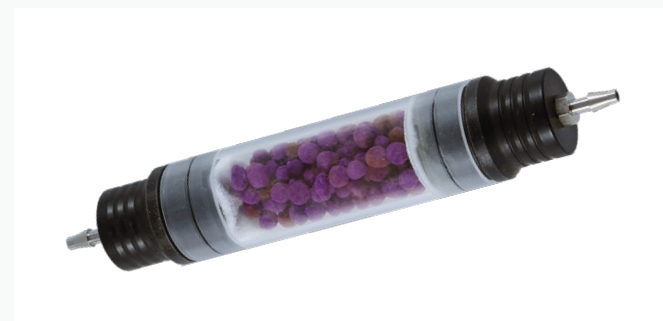
Automatic soot measurement

- incl. soot probe with heated handle and replaceable probe tube



Detector probe

- with exchangeable sensors for e.g., HC leakage detection, stack moisture test, etc. (Comfort type RCU required)



CO-sensor protection by Purafil filter

- recommended for usage at CHP engines



PC software "MRU4Win"

- Software for Windows to visualize measure data, manage, export and print
- Connect multiple devices at the same time and read out live values
- Logging and saving live values
- Database with customer contacts, attachments and manage users
- Export measurement reports as PDF
- Documents with customized logo and print out the address
- Read out data storage, save measurements, print and save as PDF

NOVA^{plus} EMI

TECHNICAL SPECIFICATIONS

NOVAPLUS Multi purpose analyzer

Fuel types

Instrument with up to 6 electrochemical cells, NDIR multi-gas bench and wireless remote control RCU natural gas, liquid gas, oil heavy, oil light, pellets, wood, coal, bio diesel, expandable fuel type list

Measurement components	Measuring range	Resolution	Accuracy
O ₂ Oxygen (Long Life)	0 ... 25%	0.1 %	± 0.2 Vol-% abs.
CO Carbon monoxide (H ₂ Compensated)	0 ... 10,000 / 20,000 ppm *	1 ppm	± 20 ppm or 5 % reading < 10,000 ppm / 10 % reading > 10,000 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	
H ₂ S Hydrogen sulfide	0 ... 500 / 2,000 ppm *	1 ppm	± 5 ppm or 5 % reading up to 500 ppm** or 10 % reading up to 2.000 ppm**
H ₂ S Hydrogen sulfide (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**www

2-gas NDIR bench	Measuring range	Resolution	Accuracy
CO ₂ Carbon dioxide	0 ... 100 Vol %	0.1 %	± 0.5 % or 5 % of the measured value**
CH ₄ Methane	0 ... 100 Vol %	0.1 %	± 0.5 % or 5 % of the measured value**

3-gas NDIR bench	Measuring range	Resolution	Accuracy
CO Carbon monoxide	0 ... 2,000 ppm up to 10 %	0.1 %	± 0.03 % or 3 % of the measured value**
CO ₂ Carbon dioxide	0 ... up to max 40 %	0.1 %	± 0.5 % or 3 % of the measured value**
CH ₄ Methane or	0 ... 2,000 ppm up to 4 %	0.1 %	± 0.03 % or 3 % of the measured value**
C ₃ H ₈ Propane	0 ... 2,000 ppm up to 20,000 ppm	0.1 %	± 30 ppm % or 3 % of the measured value**

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) (with suitable material of sampling tube)	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
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 ... 120 %	CO/CO₂ ratio	0 ... 10

GENERAL SPECIFICATIONS	
Max suction range gas pump	140 inH ₂ O (350 hPa)
Typical gas flow	23.8 gal/h (90 l/h)
Internal memory	16,000 data sets
Data transmission	via USB, SD Card or Bluetooth
Interfaces	SD card reader, USB, Bluetooth
Display	3.5" TFT color display
Operation temperature	41°F ... 113°F (5 ... 45°C) max. 95 % RH, none condensing
Storage temperature	-4°F ... 122°F (-20°C ... 50°C)
Ambient conditions	not in aggressive, corrosive or high dust ambience, not for use in hazardous areas
Battery operated BASE UNIT	Lithium-Ion battery, 20 h operation time (with gas cooler 10 h)
Battery operated RCU	Lithium-Ion battery, 30 h operation time
Grid power supply	100 - 240 V AC / 50 ... 60 Hz 5A
Protection class	IP 30 of base unit / IP 20 of base unit open
Weight	approx. 16.3 lbs.
Dimensions	(W x H x D) 18.5" x 9" x 12" complete unit
TÜV approval	ByRgG 280 acc. 1. BImSchV and EN 50379



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