

# NOVA plus BIO

# VERSATILE BIOGAS ANALYZER

Advanced analyzer for biogas,  
engine emissions tuning  
and compliance reporting



Flow

Pres-  
sure

Draft

$\Delta P$

$\Delta^{\circ}F$

$^{\circ}F$

C<sub>3</sub>H<sub>8</sub>

CH<sub>4</sub>

H<sub>2</sub>S

SO<sub>2</sub>

NO<sub>x</sub>

NO<sub>2</sub>

NO

CO<sub>2</sub>

CO

O<sub>2</sub>



since 1984 <sup>®</sup>

**AIR** fair

EMISSION MONITORING SYSTEMS

Over 30 years of innovative gas analysis!

- Simultaneous measurement of up to 7 gases
- Biogas measurement: O<sub>2</sub>, H<sub>2</sub>S, CH<sub>4</sub> and CO<sub>2</sub>
- Emissions: CO, NO, NO<sub>2</sub> and SO<sub>2</sub>
- Rugged and versatile

# WHENEVER YOUR ANALYZER NEEDS TO ACCOMPLISH MORE

MRU online View Software for trending and data export



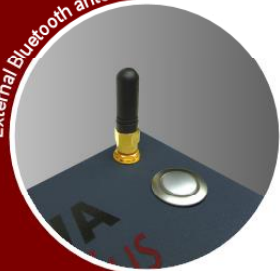
Bright 3.5" color display



RCU comfort model with additional ports



External Bluetooth antenna



RCU wireless charging



O<sub>2</sub>

CH<sub>4</sub>

CO<sub>2</sub>

H<sub>2</sub>S

O<sub>2</sub>

CO

CO<sub>2</sub>

NO

NO<sub>2</sub>

NO<sub>x</sub>



## BASE unit functions and options:

- Large condensate separator with PTFE (Teflon) coated filter  
- **OPTIONAL gas cooler**
- CO protection using fresh air pump and cut off valve (option)
- Built-in speed printer with easy paper loading
- High energy Li-Ion battery provides up to 20 hours operation time  
- **10 hours with gas cooler**
- Compact and rugged transport case

## RCU functions and options:

- Remote Control Unit (RCU) for analyzer operation
  - **Bluetooth communication with base unit**
  - **OPTIONAL Differential Temperature**
  - **Differential Pressure measurement**
  - **AUX port for additional parameters**
- Internal data storage for up to 16,000 measurements!
- Large color graphic, backlit display with zoom function
- Durable and dirt resistant keypad
- High energy Li-Ion battery provides up to 30 hours operation time
- Wireless battery charging

## Also measures...

- Combustion air temperature
- Stack gas temperature
- Stack draft
- Differential pressure
- Differential temperature

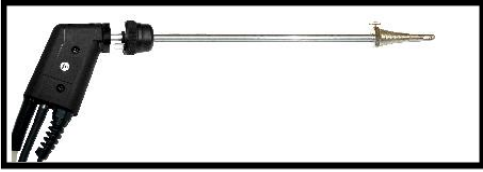
## And calculates...

- CO<sub>2</sub>
- CO/CO<sub>2</sub> ratio
- Dew point
- Excess air and air ratio (Lambda)
- Combustion efficiency
- Heat losses



# Biogas / Combustion / Emissions

## PROBES AND PROBE TUBES



Industrial probe for interchangeable probe tubes with 9' or 16' rugged, braided sheathed sampling line with K-Type t/c and Viton hose for combustion and emission measurements

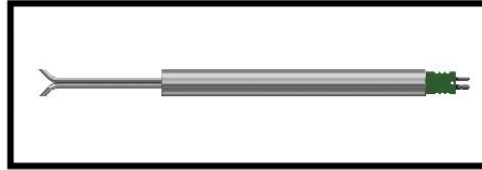


Probe tubes (4" to 80" long) in SS (1,200°F) or Inconel (2,000°F) Also available with sintered metal filter

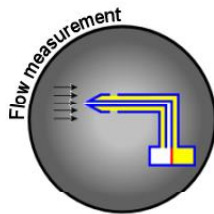
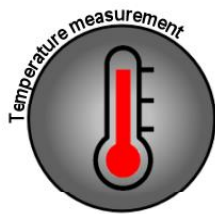
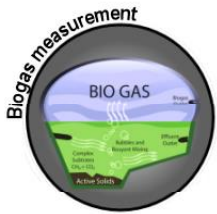


L-Type SS with or without K-Type t/c In sizes from 4" (0.12Ø) to 79" (0.47 Ø)

## 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



## TECHNICAL SPECIFICATIONS

**NOVAplus BIOGAS analyzer**      Portable analyzer with up to 5 electrochemical sensors and DUAL GAS NDIR bench

| BIOGAS components |                  |            | Measuring range                      | Accuracy   |
|-------------------|------------------|------------|--------------------------------------|--|
| CO <sub>2</sub>   | Carbon dioxide   | 2 Gas NDIR | 0...100%                             | ± 0.3 % or 5% reading  |
| CH <sub>4</sub>   | Methane          | 2 Gas NDIR | 0...100%                             | ± 0.3 % or 5% reading  |
| O <sub>2</sub>    | Oxygen           |            | 0 ... 21.0 Vol-%                     | ± 0.2 Vol-% abs.   |
| H <sub>2</sub> S  | Hydrogen sulfide |            | 0 ... 200 ppm<br>overload 2,000ppm * | ± 5 ppm or 5 % reading up to 500 ppm<br>10 % reading up to 2,000 ppm |

| FLUE GAS components |   |  | Measuring range                             | Accuracy  |
|---------------------|---|--|---|---|
| CO                  | Carbon monoxide<br>(H <sub>2</sub> compensated) |  | 0 ... 4,000 ppm<br>overload 20,000ppm *     | ± 10 ppm or<br>5 % reading < 4,000 ppm / 10 % reading > 4,000 ppm |
| CO                  | Carbon monoxide<br>low                          |  | 0 ... 500 ppm<br>with 0.1 ppm resolution ** | ± 2.0 ppm or * * 5 % reading                                      |
| NO                  | Nitric oxide                                    |  | 0 ... 1,000 ppm<br>overload 5,000ppm *      | ± 5 ppm or<br>5 % reading < 1,000 ppm / 10 % reading > 1,000 ppm  |
| NO                  | Nitric oxide low                                |  | 0 ... 300 ppm<br>with 0.1 ppm resolution ** | ± 2.0 ppm or * * 5 % reading                                      |
| NO <sub>2</sub>     | Nitrogen dioxide                                |  | 0 ... 200 ppm<br>overload 1,000ppm *        | ± 5 ppm or<br>5 % reading < 200 ppm / 10 % reading > 200 ppm      |
| NO <sub>2</sub>     | Nitrogen dioxide<br>low                         |  | 0 ... 100 ppm<br>with 0.1 ppm resolution ** | ± 2.0 ppm or * * 5 % 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<br>(with stainless steel / Inconel steel tube) | ± 4°F ... < 392°F / 1 % reading > 392°F |
| Primary-air / Ambient temperature | 0 ... 212°F  | ± 2°F                                   |
| Differential temperature          | up to 2,012°F<br>(with suitable material of sampling tube)             | ± 4°F ... < 392°F / 1 % reading > 392°F |
| Stack / Differential pressure     | +/- 40 inH <sub>2</sub> O (100hPa)                                     | ± 0.01 inH <sub>2</sub> O or 1% reading |
| Gas flow velocity measurement     | 1 ... 30 m/s (using Pitot tube)  |   |

### General specifications

|                       |  |
|-----------------------|--|
| Operation temperature | 41°F ... 113°F, max. 95 % RH, non 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<br>Lithium-Ion battery, 20 h operation, (with gas cooler 10 h)<br>- RCU<br>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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