

since 1984®

AIR *fair*

EMISSION MONITORING SYSTEMS

PRODUCT PORTFOLIO

MRU Instruments, Inc.

Innovation

Reliability

Quality

Value

Customer Service

Providing innovative handheld, portable and stationary measuring solutions for combustion, emissions, and gas analytics for over 30 years, MRU's instruments are designed and manufactured in Germany.

Support, service, and calibrations are handled in our Houston location, where a strong reputation has been established by providing fast and reliable customer service.



MRU Plant #1
Administration, R&D, Service



MRU Plant #2
Manufacturing

The MRU Story

Founded on June 1st, 1984 with just 2 employees, MRU has grown into an internationally respected enterprise. Headquartered in Neckarsulm - Obereisesheim, Germany, MRU develops and manufactures the highest in quality and reliability portable and stationary gas analyzers for combustion, emissions, and biogas.

The initial focus of the company was based on saving energy. Because large furnace operators were so impressed with how they could so quickly and easily they could improve fuel efficiency, they would place orders while the analyzers were being demonstrated on-site. In 1988, a new German directive for small combustion sources came into effect. Their official technicians, chimney sweepers, were now required to make combustion measurements. This multiplied demand for flue gas analyzers nearly overnight. Germany took a leading role in this movement, and it spread across the globe. The markets grew, and new analyzers, often tailored to country specific requirements, were developed.

Protecting the environment, has not always been a driver to the analyzer market, but it has always been important to MRU. As the world realized the need to monitor and control harmful emissions, MRU was already focused to address these needs with both portable and stationary solutions. Continuous innovation is a driving force imbedded in MRU's objectives, and a primary reason for MRU's market success. Just as import, the company never falters on the its philosophy that MRU's well-being and success is directly tied to its employees. They are the enforcers and defenders of our high quality and everlasting brand.

Always focusing on the future, MRU's founder and Managing Director, Erwin Hintz, leads the company in its pursuit of new products, markets, and ways to serve our customers.



The MRU GmbH team

MRU4U

The **MRU4U** app is available for Android and IOS.



Main features:

- This app allows you to connect your smartphone or tablet to your MRU analyzer via Bluetooth
- Control the most important functions of your MRU analyzer with your Smartphone or Tablet
- Measured data are shown live on the screen, either as text or as curve chart
- The user can select which measurement values are displayed
- Measurements may be stored on the controlling unit, assigned to a heating facility (site) and also be sent by email



MRU4win

The **MRU4win** PC software for Windows

Main features:

- Simultaneous live-tracking of measurements of several devices
- Manage customer and facility data as well as corresponding measuring data
- Create, print and export measurement protocols
- Numerous adjustments possible for a variety of applications



DM 9600

Precision Multifunction Manometer

Five different models covering ranges of $\pm 3''$ H₂O to 100 PSI

Main features:

- Intuitive, TOUCHSCREEN graphic color display
- Accuracy to 0.5%
- Dual thermocouple and auxiliary input
- Bluetooth, USB, IR, and SD card interfaces
- Temperature compensated pressure sensor
- Automatic zeroing for long-term stability
- Simultaneous display of pressure and temperature readings
- 1000 points and 500 sites data memory
- USB charging and data download
- Hands free operation via magnetic back case
- 20-hour Lithium battery



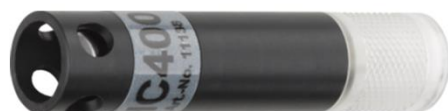
DM 9600 / CHP

Precision Manometer for numerous pressure-differential pressure- and temperature-measurements at CHP plants

Main features:

- same as above
- Electronic, long-term stable pressure sensor for up to 7 bars (100 psi)
- external sensor: 10 bar (145 psi)
- Engine inlet pressure
- Boost pressure
- Intercooler differential pressure
- Exhaust back pressure
- Crankcase pressure
- Internal pressure



400 GD**Multifunction Detector for
Gas Leakage and Stack Humidity Test****Main features:**

- Reliable gas leak detection and stack humidity test with only one system
- Adjustable alarm thresholds
- Optical alarm at the sensor and on the display of the device
- Acoustic and vibration alarm by the device
- Strong Lithium-Ion battery, chargeable via Mini-USB socket
- TFT colour display
- Handy device with dirt resistant keypad
- Adjustment factors are stored in the sensor, so it can be used with different devices
- Power supply for battery charging

**AMPRO 2000****The most powerful Handheld gas analyzer**

The **AMPRO 2000** measures up to **6** gas components simultaneously!

Main features:

- Emission calculations such as mass flow calculated or True NO(x), plus O₂ ref. to user defined values
- O₂, CO, CO₂, NO, NO₂, SO₂, & CO-high
Up to 6 electrochemical sensors, plus CO₂ NDIR bench
Available low CO, NO and NO₂ ranges
- High energy Li-Ion battery
- Large condensate separator with PTFE coated filter
- Air purging pump for CO-sensor protection
- Internal data storage for up to 16,000 measurements
- Large color graphic, backlit display with zoom function
- Customizable screen settings
- IR interface for external printer
- Integrated SD card reader for additional memory and easy data handling



NOVA *compact*

For professionals who are looking for an extremely compact and rugged analyzer

Fast and accurate measurements for all gas, oil and solid fuel applications

Main features:

- Simultaneous measurement of up to 4 gases
- Easy intuitive operation
- Large condensate separator with PTFE coated filter
- OPTIONAL - Peltier gas cooler
- Suitable also for CHPs (cogeneration heat and power engines)
- Differential temperature measurement
- Differential pressure measurement
- Built-in speed printer with easy paper loading
- Rugged transport case



NOVA *plus*

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

Bluetooth communications between BASE unit and REMOTE control unit

Main features:

- 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
- Large condensate separator with PTFE coated filter
- OPTIONAL - Peltier gas cooler
- High energy Li-Ion battery
- Built-in speed printer with easy paper loading
- Compact and rugged transport case



VARIO *luxx*

PORTABLE EMISSIONS ANALYZER

semi-continuous monitoring of nearly any combustion/emission application

Main features:

- Simultaneous measurement of up to 9 gases
- Linux operating system
7" high contrast, color touchscreen with graphical data display
- Emission calculations such as mass flow calculated or True NO(x), plus O₂ ref. to user defined values
- Integrated Peltier cooler with automatic condensate drain pump
- Gas flow restrictor orifice and
- Internal sample flow monitoring
- Strong, regulated sample pump
- Data transfer over LAN Ethernet or USB
- AND MUCH MORE



VARIO *luxx* SYNGAS

The potable SYNGAS analyzer

Long-term process gas analysis for specialty gases

PORTABLE / VERSATILE / RUGGED

Suitable for semi-continuous measurements of "syngas" including the following applications:

- Steel industry: coke oven gas, blast furnace gas
- Biomass or coal catalytic oxidation (gasification)
- Waste gasification process, plasma gasification process
- Steam reforming of liquid hydrocarbons (refinery gas etc.)
- Flare gases
- Research ... and others



MGA *luxx*

**Heavy duty flue gas emission analyzer
for long time measurements of industrial combustions, large boilers,
gas engines and turbines, furnaces and many more...**

Main features:

- Simultaneous measurement of up to 9 gas components!
CO, CO₂, NO, NO₂, SO₂ & HC using NDIR
H₂ & H₂S using electro-chemical sensors
O₂ using ECS or PM
- Using single beam through sample cell for NDIR measurements
- Strong, regulated sample gas pump and easy replaceable, effective PTFE filter
- Internal sample flow monitoring with display and alarm
- Zero gas (ambient air) air inlet nozzle and passive VENT outlet of sample gas
- Large, 7" (840x480) color display with touch & swipe technique



MGA *prime*

**HIGH END flue gas emission analyzer
for long time measurements of industrial combustions, large boilers,
gas engines and turbines, furnaces and many more...**

Main features:

- Simultaneous measurement of up to 9 gas components!
CO, CO₂, NO, NO₂, SO₂, CH₄, C₃H₈, N₂O using NDIR
O₂ using ECS or PM
- Using advanced technology for NDIR measurements w. improved accuracy and w/o offset drifts
- Using single beam through sample cell for NDIR measurements
- Integrated, efficient dual heat exchanger gas cooler (Peltier type) with dual automatic condensate draining pumps



OMS 420

In-Situ Oxygen & Combustibles Monitor

Four different versions:

Compact, Remote, High Temp, & EX

Main features:

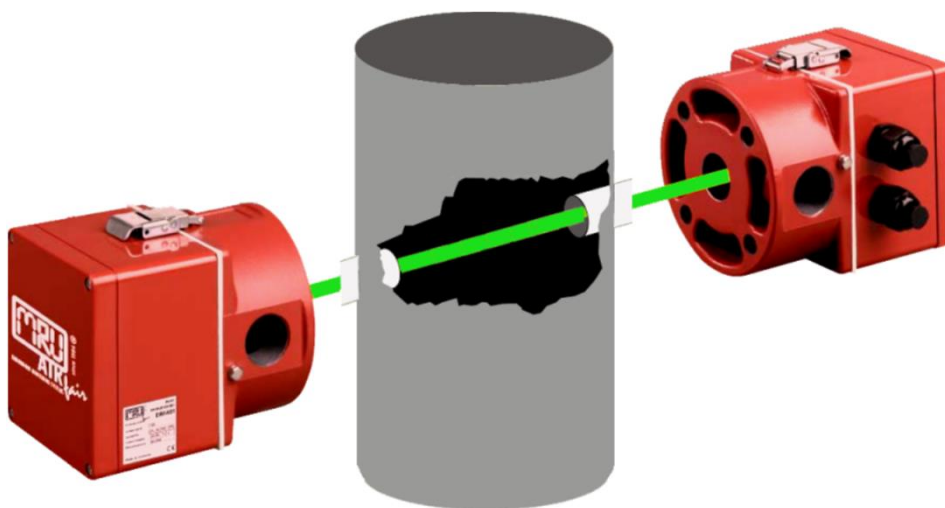
- Combination of O₂ & COe for Real-time measurements
- Stable, long-life Zirconium sensor combustible sensor
- Unique, heated solid electrolyte combustible sensor
- Easy access to sensor for fast and simple service
- Suitable for high-dust particulate applications
- High temperatures to 3,000°F
- Probe lengths to 6'
- Optional AUTO-CAL



DM 401

Dust Monitoring System

double pass transmission measurement



Measures 0 to 100 % Opacity
or 10 to 1,000 mg/m³ Dust

SWG 100 CEM

Stationary Analyzer for continuous emission monitoring

Main features:

- Measures up to 6 gases
O₂, CO, NO, NO₂, SO₂, & CO₂ (NDIR)
- Easy service via Plug & Play sensors
- Advanced sample gas preparation
- Handles pressurized or low-pressure flue gas, even from a long distance
- Flexible platform various combustion applications
- Auto zero and optional auto calibration
- Simple installation - ready to run delivery



SWG 300-1

Complete CEMS

EMISSIONS MONITORING

PROCESS GAS
OPTIMIZATION

PRECISE -
POWERFUL AND
EFFICIENT

Main features:

- Extractive Cold and Dry Method
- Customizable to fit nearly any application
- Multi-stack sampling
- Automatic calibration with test gases
- Easy to service and maintain



OPTIMA 7 BIOGAS

VERSATILE BIOGAS ANALYZER

Ideally suited Landfills, Digesters, & even Energy to Waste Engine Tuning

Main features:

- Fast and easy to use with intuitive menus and function buttons
- Large, color, back-lit display with ZOOM features for viewing in any condition
- Customizable screen settings
- Durable and dirt resistant keypad
- High energy Li-Ion battery operates up to 8 hours
- Large 16,000 measurements internal memory
- USB, SD Card, and Bluetooth interfaces
- Integrated SD card reader for additional data storage easy data handling
- Sample preparation with condensate separator and with Teflon filter
- Pressure, flow, and temperature measurements



NOVA *plus* BIOGAS

Advanced analyzer for biogas and engine emissions tuning and compliance reporting

Main features:

- Simultaneous measurement of up to 4 (max. 7) gases
- Biogas measurement: O₂, H₂S, CH₄ and CO₂
- Emissions: CO, NO, NO₂, SO₂ – low to high ranges
- O₂ measurement 0 - 25.00%, using long-life sensor
- Biogas / differential pressure measurement (0 ... +/- 300 mbar)
- Battery and line power operation
- Internal data storage for up to 16,000 measurements
- Mini-USB interface for cable data transfer to PC
- Built in high speed printer
- Integrated SD card reader for additional data storage easy data handling
- Sample preparation with condensate separator and with Teflon filter (optional gas cooler)



SWG 100 BIO-compact

Basic Biogas Analyzer

Main features:

- Cost effective stationary biogas analyzer
- Accurate measurements via sample gas conditioning
- Simple service via plug & play, pre-calibrated sensor
- Gas flow restrictor orifice and ventilation for added safety
- Up to two sample points monitoring with Time Sharing



SWG 100 BIOGAS

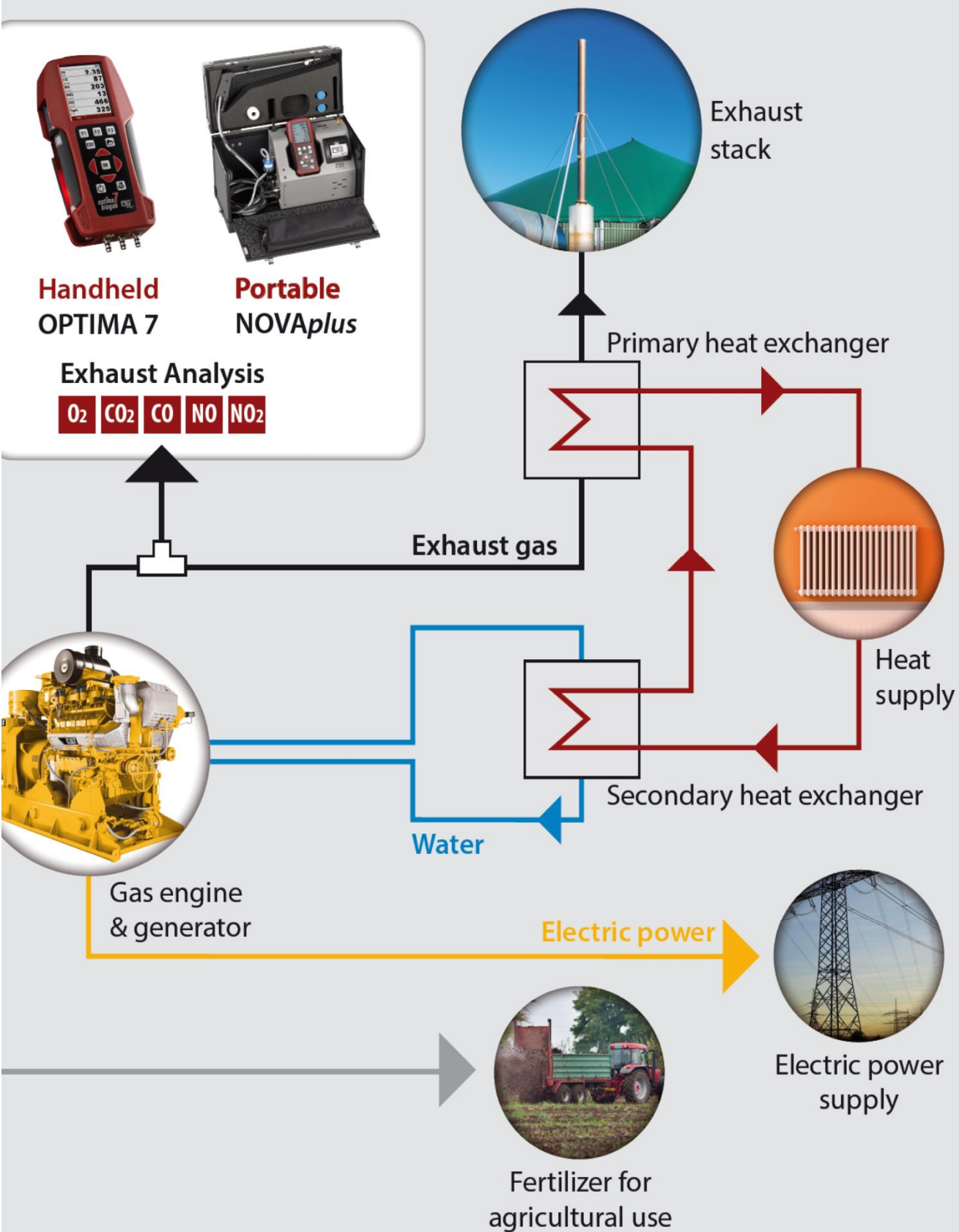
Landfill and Biogas analysis For optimizing production, performance and reporting

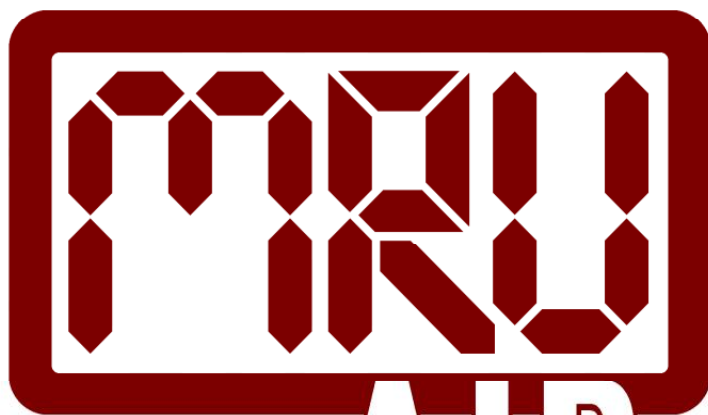
Main features:

- Continuous and Semi-continuous operation
- Efficient gas prep provides fast and reliable measurements
- Sampling from low suction to high pressure
- Up to 10 sites monitoring via Time Sharing
- Fresh air auto zero
- Multiple inputs/ outputs of (4) 4.20mA, (2) relays, RS485 Modbus, Ethernet even Profibus
- Safety: Monitored ventilation fan, gas flow restrictor, optional %LEL detector and flame arrester
- Fast & easy installation: Connect and go with no need for compressed air for dilution
- Optional Auto Calibration









since 1984®

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EMISSION MONITORING SYSTEMS

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