# R990 M MicroGC

## Specifications

- Rapid analysis of the quality of natural gas or a biomethane, of its Metrology-certified SHV and of THT odorant
- 5U 19" Rack
- Turnkey analysis
- Modbus link to supervisor or PLC
- Modbus link dedicated to Metrology and to communication with the auxiliary gas volume conversion device

Measurement of the quality of natural gas or a biomethane and its heat value are essential parameters before injection into the natural gas network.
The R990 M analyzer has been developed to meet this requirement.

**Compact system.** The system is mounted in a 5U 19" Rack compatible with standard analysis bays.

**Quick analysis.** The R990 M can perform a measurement every 3 minutes.

**Immediate start-up.** The instrument is delivered ready for use with acceptance report.
The entire analytical method is provided with the device.

**Connection.** The R990 M is designed to be connected by Modbus link to allow the transmission of results.

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**Configuration :**

- Three specific channels for the analysis of the quality of natural gas or biomethane, H2S, COS and the certified SHV measurement
- A fourth channel with a dedicated sample input for the analysis of THT or other compounds
- Computer and embedded software including:
  - Automation
  - Piloting
  - Control
  - Integration and calculation
  - Modbus tables
- Optional touch display

**System settings :**

- With the Soprane CDS software installed on the embedded PC
- Possibility to connect directly screen, keyboard, mouse on the analyzer for maintenance operations
- Possibility of remote control via Ethernet connection

**Injector :**
- Miniature without moving part
- Variable injection volume from 1 µL to 10 µL
- Heated

**Oven :**
- Isotherm can be set from 40 °C to 180 °C

**Detector :**
- Micro catharometer (TCD)
- Two channels (sample and reference)
- Internal volume: 200 nL per channel
- Filaments: 4

**Quantification limit :**
- a few ppmV

**Measuring range :**
- Concentration from ppmV to 100 %
- SHV from 9 to 14 kWh/$m^3$ (32.4 to 50.4 MJ/$m^3$)

**Repeatability :**
- Less than 2 % RSD at 25 °C with sample temperature stabilized at 25 °C

**Adjustment :**
- Using a standard mixture not supplied
- Performed on an average of 3 consecutive analyses

**Uncertainty of measurement :**
- SHV, Wobbe index, density: the device is class A
- Less than ± 5 % of the read value for CO2
- Less than or equal to ± 20 % of the read value for O2, H2S, THT

**Carrier Gas :**
- Helium 99.9999 % purity, 6.0 ± 0.1 bar rel.
- 1/8" Swagelok type inlet connection, stainless steel

**Sample :**
- Swagelok type inlet connection, stainless steel
- Integrated high capacity 5 µm dust filter
- Maximum inlet pressure 1 bar rel.
- Minimum inlet pressure 0.1 bar rel.

**Environment :**
- Relative humidity : 0 to 95%
- Temperature : -10 °C to 40 °C

**Communication :**
- TCP/IP Ethernet port
- Modbus certified Metrology

**Alarms :**
- Configurable
- SHV and total of raw concentrations by default

**Automation :**
- Automatic start possible on power-up or after mains return
- Delay between analyses can be configured
- Minimum duration of an analysis cycle: 3 minutes

**Data filing :**
- On the embedded computer

**Dimensions and weights :**
- 5U 19" Rack version :
  L 482 mm x H 221.5 mm x W 495.5 mm
- Desktop case version :
  L 448.9 mm x H 236.7 mm x W 495.5 mm
- Weight : 22 kg for 3 modules
  24 kg for 4 modules

**Power supply :**
- 100-240 VAC 50-60 Hz – 150 Wmax
- Fuse T6.3A

**Approval for commercial transaction :**
- LNE-39085

*Version 1.1*