RGQ 5

RMG Gas Quality calorimeter

➲ Reliable, no moving parts

➲ Fast reaction time

➲ Low operation cost, no OPEX

The RGQ 5

The RGQ5 is a low CAPEX gas analyzer designed for continuous measurement of combustible gases. The device displays the properties (H_S, H_I, WI_S, WI_I, ρ, Z, s-AFR, MZ, CO_2, H_2 Vol%) of the gas compositions every second.
Gas flows at a low flow rate (50 ml/min) through ¼" NPT connections into the RGQ 5. A 4-20 mA analog signal and a Modbus RTU interface are available as output signals.
The RGQ 5 uses patented gas viscometer technology in combination with other MEMS sensors. The analyzer was specially developed for biomethane injection, hydrogen admixture, combustion control, gas network monitoring and other stationary applications.
The sensor units are designed in 4 different variations. These have been developed for different accuracies and gas compositions.

RGQ 511 Extended
Viscosity and Thermal Conductivity Detector
RGQ 522 Renewable
Viscosity, TCD and CO_2 Sensor
RGQ 513 Hydrogen
Viscosity and TCD Sensor and H_2 Detection
RGQ 524 Ultragreen
Viscosity, TCD, CO_2 Sensor und H_2 HW

Output data:

- Wobbe Index (WI_S & WI_I)
- Calorific value (H_S & H_I)
- H_2 und CO_2 Vol-% (optional)
- Density, Relative density, Compressibility
- Air/fuel ratio
- Methane number MN

Accuracy:

- ≤ 1% from measured value
- For other gas compositions on request

Maintenance-free and reliable

- No moving parts
- No chemical sensors

Fast and consistent measurement

- Viscosity data every 7 seconds
- Thermal conductivity and CO_2 reading every second

Additional feature:

- Certified explosion-proof housing
- Built-in gas flow reducer
- Interfaces: 4-20mA, Modbus RTU
- Power supply: 24VDC
- Plug and play installation & operation
- Easy replacement of the sensor unit
- CE, ATEX & IECEX certificate (optional)

Output data:

	Units	Reference Conditions
Wobbe Index (W_S &W_I)	MJ/m³, kWh/m³, BTU/scf	0/0°C, 15/0°C, 15/15°C, 20/20°C, 25/20°C at 101325 Pa und 60°F at 14.696 psi absolut
Calorific value superior H_S		
Calorific value inferior H_I		
Density ρ	kg/m³, lbm/scf	
Relative density		
Compressibility Z		
Air/fuel ratio λ		Volume, 20,946% O2
Methane number		
CO_2[1)] & H_2[2)] Concentration	Mol%	

1) For models with CO2 sensor, RGQ 522 „Renewable“ and RGQ 524 „Ultragreen“
2) For models with corresponding correlation model, RGQ 513 „Hydrogen“ and RGQ 524 „Ultragreen“

To be used for all gases with the following composition:

Methane	CH4	70-100 Mol%	
Ethan	C2H6	0-20 Mol%	
Carbon dioxide	CO2	0-3 Mol%	0-20 Mol%[1)]
Hydrogen	H2	≤ 0,5 Mol%	0-30 Mol%[2)]
Water Gaseous	H2O	≤ 0,1 Vol%	
Dust, liquid		without	

Propane	C3H8	0-5 Mol%
Butane	C4H10	0-3 Mol%
Higher alkanes		0-1 Mol%
Nitrogen	N2	0-15 Mol%
Oxygen	O2	≤ 3 Vol%
Sulfur	H2S	≤ 0,01 Vol%

Calorific value H_S	7,64 bis 13,89 kWh/m³ (25°C/0°C)

Environmental requirements:

Operating temperature	0 to 50 °C
	optional extended temperature range -20°C to 70°C with limited accuracy
Storage temperature	-40°C to 70 °C
Bursting pressure	< 250 mbar overpressure
Operating pressure	960 bis 1100 mbar absolut (50-200 mbar Überdruck)
Flow velocity	50 ml/min (+/- 10%), adjustable on request
Humidity	0-95% relative humidity, non-condensing

Electrical and mechanical specifications:

Interface	Modbus RTU (RS485), analog output (4-20mA current loop)
Supply voltage	24V, < 2W
Dimensions and weight	140mm x 135mm x 125mm und 2,6kg
Gas fittings	2 x 1/4" NPT (female)

Certificates:

Protection class	IP66
ATEX & IECEx certificate	Ex II 2G Ex db IIC T6 Gb