

Gases

Sampling – Processing – Analysis

GO-ATC series



GO-ATC

Online Measurement of Hydrocarbons in Gases

Field of Applications

FID was yesterday – ATC is today

- no consumables
- no ultra high purity gases
- low operating costs
- resolution 0.001 mg Cx Hy
- genuine online measurement
- no zero gas/ no burn gas

This process (patent-No. 10 2009 017 932) can be used for online measurement of hydrocarbons and other chemical substances in many areas of industry and research, e.g. for ultra high purity gases and breathing gases, chemical industry, above all, petrochemical industry, ambient air monitoring, waste water treatment etc.



The GO-ATC Principle of Measurement

The GO-ATC is an online analysis system for determination of the THC (Total Hydro Carbon) fraction of the air and other gas component of the air (optional). Simultaneous online measurement of methane for the determination of the value of the NMHC (None Methane Hydrocarbons).

Unlike conventional air measurements, which determine the absolute value of the organically bound carbon in the gas flow, with this principle, the difference between the concentrations in the two gas flows is formed. The THC value is determined by measuring and calculating the CO₂ concentrations in the gas flows.

Specifications

GO-ATC

N-DIR Gas analyser	Ultramat U6	^
Smallest effective range ATC	LQD 0,002 mg CO ₂ /Nm ³ = 0,77 ppb Cx Hy/Nm ³ LDL 0,001 mg CO ₂ /Nm ³ = 0,4 ppb Cx Hy/Nm ³	
Admissible water content in test gas	8,00 ml/l / 500 ml/h per channel	
Display	LCD	
Limit values	4	
Output signals	0 / 2 / 4 – 20 mA / serial interface	
Operating temperature oxidation oven	1.000 °C	
Temperature rise time	approx. 180 min.	
T₉₀ time	20 seconds	
Gas cooler	Peltier cooler GO-PK2	
Crude gas sample flow rate	2 x 1 l min.	
Power consumption	max. 2800 W	
Power supply	230 V, 50 Hz	
Ambient temperature	+5 to +30 °C	
Dimensions (HxWxD)	1150mm x 560mm x 600mm	
Weight	85 kg	
Automatic zero point adjustment	Yes / automatic calibration	
Materials contacting sample	Ceramic, Glass, Viton, PVC, VA	
Options	<ul style="list-style-type: none"> - Device for measuring absolute CO₂ - Device for measuring other gases - Software - Other options upon request 	

GO-ATC

Online Measurement of Hydrocarbons in Gases

GO-ATC Analysis Technique

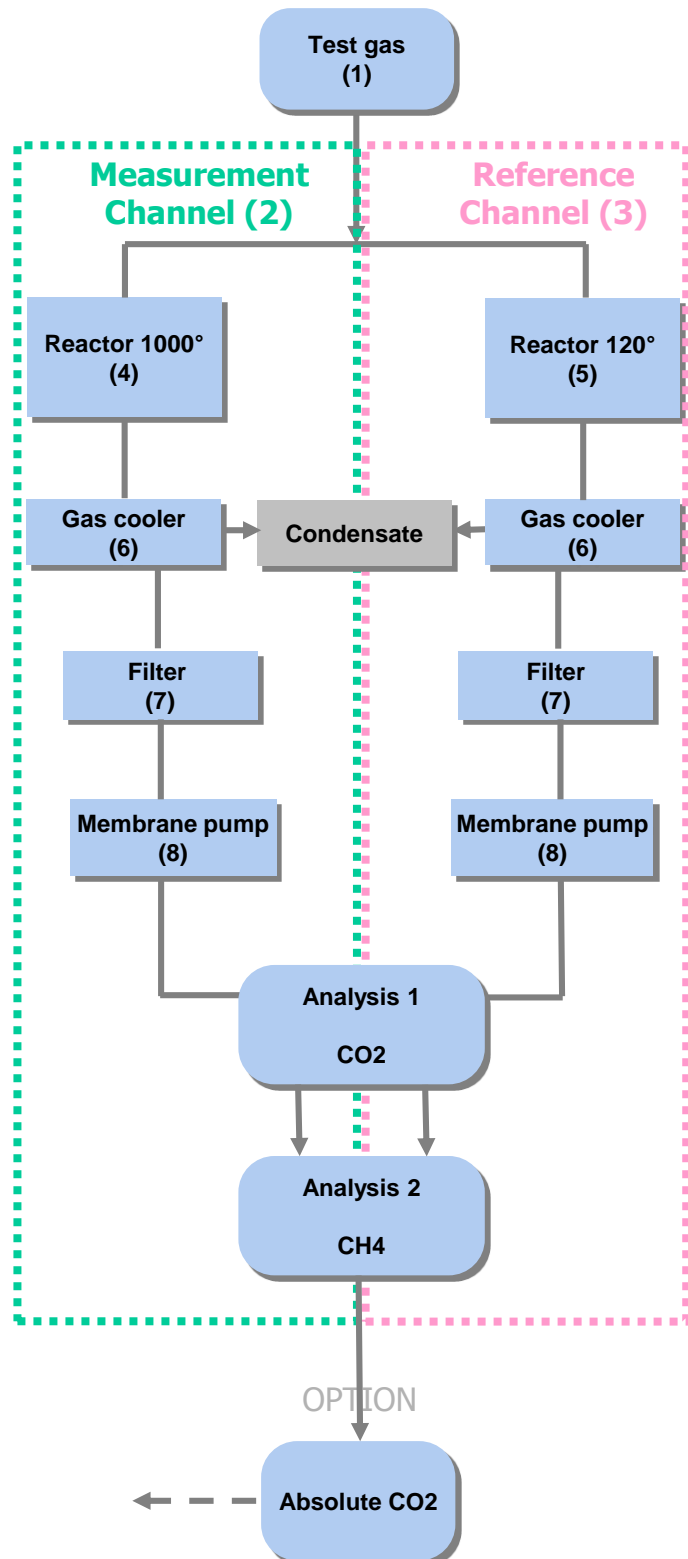
A gas sample (ca. 120l/h) is drawn continuously from the gas to be analysed (1). The gas flow is evenly divided between the symmetrical/parallel running **Measurement** (2) and **Reference Channels** (3). The gas flow in the measurement channel is passed through a reactor (4) which has been heated to 1.000° C and is filled with a catalytic, coated substance. In the reference channel, the gas flow is passed through a reactor (5) which has been heated to 120°C to avoid deposits of water or hydrocarbons. Subsequently, the measurement/reference gas is passed through a gas cooler (6) for drying (the resulting condensate is drained off), and afterwards it is passed through the filter (7) to remove acid and particles. Then the mass flow rate is controlled by means of a membrane pump (8) and flow control.

Analysis 1: The CO₂ concentration of the gas in the test bulb is compared with the reference bulb by means of a CO₂ measuring cell.

Analysis 2: Likewise, the concentration difference of CH₄ (methane) is determined by comparing the reference bulb to the test bulb.

Absolute CO₂ Measurement (Option)

In addition to measuring the THC, the determination of the absolute concentration of CO₂ in the test gas is an optional feature. For this measurement, the gas flow is redirected from the reference bulb to the test bulb of a second test system. The measurement of the absolute CO₂ concentration in the test gas is possible because it is compared to the reference gas in the reference channel.



Our newest chief attraction: the GO-Mini-ATC

Measurement device for compressed air implementation and measurement of ambient atmosphere patented measuring procedure (Patent-No. 10 2009 017 932)

- compactly in small analyzer
- professionally in the continuous carbon measurement
- adaptably in the use
- persuasive in the result and in the achievement



Applications

- **Immissions- and emissions control**
- **Industry** as chemical-especially petrochemical industry
- **Research institutions** in the purity gas and breathing gas field
- **Wastewater Treatment Technique** in the wastewater sector for monitoring of methanol
- **Hospitals** for climate system monitoring
- **Aviation** for monitoring the cabin air
- **Chemical laboratories**
- **Filter monitoring**
- **Alternative to the DIN measurement**
- ... etc.

The Principle of Measurement of the GO-Mini-ATC is analogous to the large device.

Specifications

GO-Mini-ATC

N-DIR Gas analyser	Ultramat U6
Smallest effective range ATC	LQD 0,002 mg CO ₂ /Nm ³ $\hat{=}$ 0,77 ppb Cx Hy/Nm ³ LDL 0,001 mg CO ₂ /Nm ³ $\hat{=}$ 0,4 ppb Cx Hy/Nm ³
Admissible water content in test gas	8,00 ml/l / 500 ml/h per channel
Display	LCD
Limit values	4
Output signals	0 / 2 / 4 – 20 mA / serial interface
Operating temperature oxidation oven	1.000 °C
Temperature rise time	approx. 60 min.
T90 time	10 seconds
Gas cooler	GO-ATC cooler
Crude gas sample flow rate	2 x 1 / min.
Power consumption	max. 350 W
Power supply	230 V, 50 Hz
Ambient temperature	+5 to +30 °C
Dimensions (HxWxD)	450mm x 440mm x 320mm
Weight	30 kg
Automatic zero point adjustment	Yes / automatic calibration
Materials contacting sample	Ceramic, Glass, Viton, PVC, VA
Options	- Device for measuring other gases - Software - Other options upon request

GO-ATC

Degassing Unit for Measurement of VOC-ingredients in water

Degassing unit for volatile organic carbons in liquids (VOC)

With an upstream decanting unit, the liquid being measured will be freed of contaminants. At this point, the degassing air is sucked or pumped. For this no filters are needed, ambient air is sufficient.

In the following loops, the volatile carbons are degassed.

In the cyclone separator will now be made the separation between gaseous and liquid components. The liquid constituents are pumped off. The gaseous constituents can be supplied to the measuring device.

As a measuring device a GO-ATC can be used. The subsequent use of a gas-phase chromatograph is also possible.

