

BASE BA-GSG Gas Specific Gravity Online Analyzer

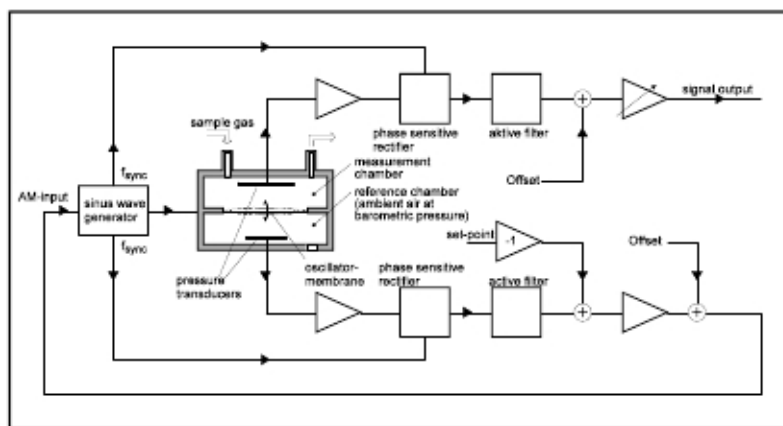


The BAGGI BA-GSG is part of the **BAGGI BASE® Instruments Series**. They are the result of combining the latest state-of-the-art-technology with over 50 years of industry experience.

The BA-GSG is an online process analyzer for continuous, reliable and accurate measurement of the specific gravity (density) of a gas mixture. It is also available for operation in an explosive atmosphere (**ATEX**) environment. This instrument is equipped with a cell for measuring the specific gravity of the process gas in a specially designed sample chamber, using a modulated acoustic signal. Here follows the description of the principle of operation (please refer to the figure beneath).

The process gas flows through the measuring chamber in the cell. The oscillations of a transmitter membrane (with constant amplitude and frequency) are transferred to a pressure transducer by the gas. The amplitude of the signal on the pressure transducer is directly proportional to the density of the process gas. This oscillating signal is amplified and processed by the electronics, in such a way that a continuous output signal (in Volt) is

generated. A reference chamber, in the measuring cell, compares the measurement with atmospheric air at ambient conditions. The signal, received from the chamber with the reference measurement, controls the amplitude of the oscillating transmitter membrane and the density measurement is insensitive to small particles on the oscillating membrane. A small heater is used to maintain thermal stability.



The figure illustrates the functional diagram of the measuring cell.

The sensitivity of the cell to external influences, such as mechanical vibration, impact or pressures, is greatly reduced due to its mounting system, relatively high mass and electronic filters. The cell is fitted with tension springs that mechanically decouple the system. The small sample of process gas that flows through the cell is returned to the main gas stream and no gas is vented to the atmosphere.

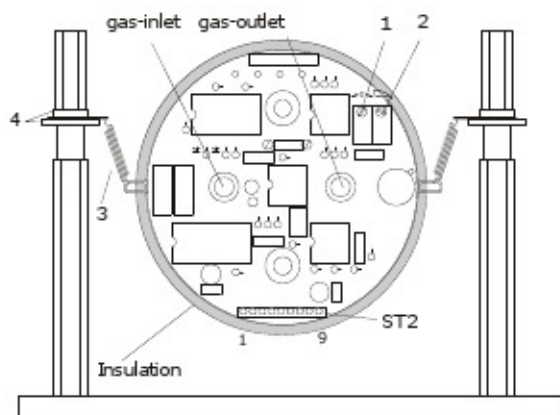
No regular maintenance is required.

The BASE® Series embedded computer (the picture at the top shows the ATEX version) is the heart of the system. The computer collects the signals from the cell and from any other sensors (if a multi-parameter system has been delivered) and is in charge of:

- Calculating the measured quantities from the raw data
- Transmitting the values over 4...20 analog mA signals
- Actuating the output relays for indicating possible alarms
- Displaying the measurement data and the system status in a Graphical User Interface (GUI)
- Archiving the measurement data in Microsoft Office compatible format
- Allowing remote Operation and Maintenance by WiFi and Ethernet connections

When required, the analyzer is delivered in an ATEX version.

In this case the computer, together with the sensors and the power supply, is within a pressurized enclosure provided with a protective purge system (N2 gas) and an optional Vortex cooler.



An input pressure regulator is included, adjusted at 15 mbar. An additional regulator may be required according to the application.

This figure gives the details of the measurement cell.

- 1: potentiometer for Zero
- 2: potentiometer for Span
- 3: suspension springs
- 4: insulating discs

Specifications	
Specific gravity range (air = 1.0)	0.2 ÷ 2.2 (standard) 0.0 ÷ 2.0 (Hydrogen applications)
Specific gravity accuracy	+/- 1% full scale
Response time	5 sec (typical)
Input/output (configured according to the application) Note: in case of a multi-parameter analyzer, the same control unit is in charge of the different sensors.	<ul style="list-style-type: none"> - Analog input: four inputs filtered with transient protection - Analog output: three isolated outputs, 4 – 20 mA (standard) - Analog output: three additional isolated outputs (optional) - Digital input: six digital inputs (optional) - Digital output: four isolated relay signals (alarm and warning) - Digital output: four additional relay signals (optional) - Serial line: RS-232/RS-422/RS-485 with Modbus/Profibus/FieldbusFoundationProtocol - Ethernet card: two 10/100 mbps with RJ-45 port - One integrated WiFi card 11 Mbit/s
Environmental conditions	<ul style="list-style-type: none"> - 0 °C to 40 °C (32 °F to 104 °F) - 0 °C to 55 °C (32 °F to 131 °F) with vortex cooler
Enclosure protection	IP66
Compliances	- EN 61326, EN 61010-1
ATEX classification (optional)	<ul style="list-style-type: none"> - II 2 G Ex px II T6 - II 3 G Ex pz II T6
Power	90-264 VAC, 47-63 Hz; 6A max
Dimensions/weight	<ul style="list-style-type: none"> - Wall Mount: 500mm H x 400mm W x 250mm D (19.68" H x 15.74" W x 9.84" D) - Weight: 15 Kg approx.

All the specifications subject to change without notice

For specific requirements, please contact the e-mail address below:
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