

Specific Gravity Measurement of Gas



Applications:

- Controlling of LPG-air applications in the field.
- Measurement of specific gravity of Propane/ Butane mixtures
- Measurement of all kinds of industrial gases

Description of DS 2005

A lot of applications in the gas industry require a specific gravity measurement.

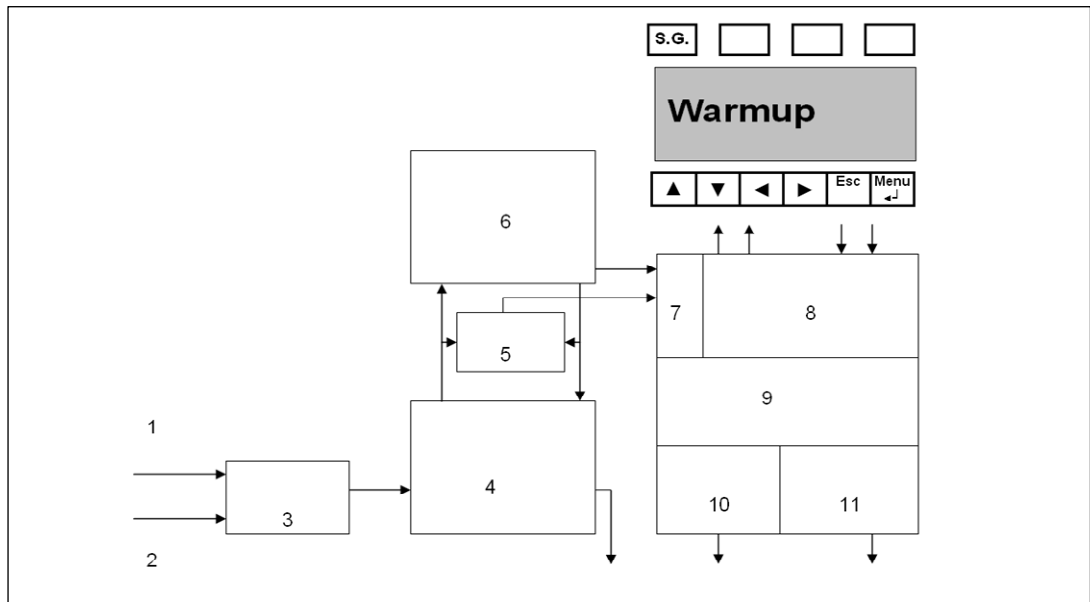
The DS 2005 indicates the specific gravity of burnable or unburnable gases in a large range of s.g. 0.2 to 2.2 (air=1). It is an online measurement without flame. Output is 4-20 mA linear to the range of 0,2 to 2,2. The gas consumption is about 8 - 25 liters per hour. The measured gas will be burnt, or led in the open air. A receiver and a transmitter is located in a stainless steel body. The trans-

mitter emits sonic waves of about 1 kHz. The receiver forms a linear signal 4-20 mA, depending on the s.g. characteristic of the wave changes.

An other part of the specific gravity cell measures ambient air under same conditions as the gas measurement. This is the compensation of ambient air temperature and barometric pressure. An automatic calibration calibrates the DS 2005. Automatically a calibration gas can be switched on to the process in time steps which can be programmed by the customer.

A large measuring range of all kinds of gases without recalibration is possible. As an option the zero point can be calibrated from dv 0 instead of dv 0.2 in case of hydrogen measurement.

A 4 x 20 character display indicates the actual value of S. G. online.



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|----|---------------------------|----|-----------------------|
| 1 | Input process gas | 2 | Input calibration gas |
| 3 | Valves for switch gases | 4 | Pressure Block |
| 5 | Differential pressure | 6 | S.G. Cell |
| 7 | Signal Process Gas Sensor | 8 | Display with buttons |
| 9 | Microprocessor | 10 | Status signals |
| 11 | Output 4..20 mA | | |

Technical Data

Enclosure

Dimensions

Width 610 mm
 Depth: 210 mm
 Height: 610 mm
 Weight: 28 kg

Material

SG Cell SST
 Enclosure Aluminum

Ranges

0,2...2,20 dv
 Option
 0,0....2.0 dv

Connections gas

Input 6x1 mm Swagelock
 Output 6x1 mm Swagelock

Accuracy

± 1,0% full scale
 Ambient temperature
 from ± 0°C to +40°C

Resolution

± 0,001 full scale

Gas Pressure Input

30-50 mbar max 100 mbar

Output analog

4...20 mA, Load 500 Ohm

Output digital

- RS 232

Output digital (Options)

- Profi Bus dp
- CANopen
- Ethernet-IP
- Interbus
- Modbus-Plus

Indication Times

Response time: 5 sec
 Dead time: 10 sec
 Warming up time: 45 min

Powersupply

90...260 V/50/60HZ

Electronic data

- 4x20 Character display
- Automatic calibration with calibration gas. Calibration time selectable between 1 hour and 999 hours
- Relais for switching from process gas to calibration gas
- Temperature measurement