

Gas Detector

RapidGas Multi

Product code: PW-076-B



Reliability



Innovative



A wide range of sensors



Information about the product

RapidGas Multi is a multi-channel gas detector for measuring the concentration of a specific gaseous component in a sample. The sampling is being carried out by the aspiration method. RapidGas Multi can handle from one to ten sampling points. Due to its flameproof construction, it can be installed in potentially explosive atmospheres.

RapidGas Multi is thus a universal hardware platform, able to adapt of virtually any gas sensor. This enables us to this enables the optimization of the construction of the device to the requirements of the particular installation and its operating conditions (configurable parameters include e.g.: type of gas to be detected, measuring range and accuracy, reaction time, ambient temperature, humidity, etc.).

Areas of application

RapidGas Multi is a device that can be used in all applications where:

- there is a need to monitor gas concentrations in many locations, distributed **over** the protected area, by means of a single, multi-channel device,
- measuring points, and thus sampling points, are installed in locations with limited access for Operators,
- unusual, harsh environmental conditions (extreme temperatures, extreme humidity, vibrations, high electromagnetic fields, etc.) may occur at measuring points,
- there is a need to use an expensive measurement technology or an aspiration sampling is needed,
- it is expected to achieve a higher measurement accuracy, thus it is necessary to use temperature stabilization, gas pressure compensation, sample drying, periodic auto-zeroing / auto-calibration of the device,
- it is necessary to take a sample, e.g. from a pipeline, ventilation duct etc.

Operating mode and measurement (metrological) properties

Through sampling points, gas paths, gas multiplexer and an optional pump, the sample is transported to the gas sensor(s) in the device, which measures the concentration of the specific gas component and then the sample is exhausted out of the device. Channels are measured sequentially.

If the unit is supplied with zero air, it can be used in two ways. One, it can be used to periodically reset zero drift of the sensor, if any, and, two, it can be used to purge the gas paths backwards in order to clean them. This prevents the accumulation of condensate and dirt in gas paths.

Other

Additional functions of the device:

- internal stabilization of the operating temperature of the instrument above the dew point of the sample,
- practically unlimited range of temperature of the sample at the sampling point,
- sample flow check,
- optional pressure compensation (i.e. for NDIR sensors).

All these functionalities allow us to obtain better metrological parameters than for an "unprotected" sensor.

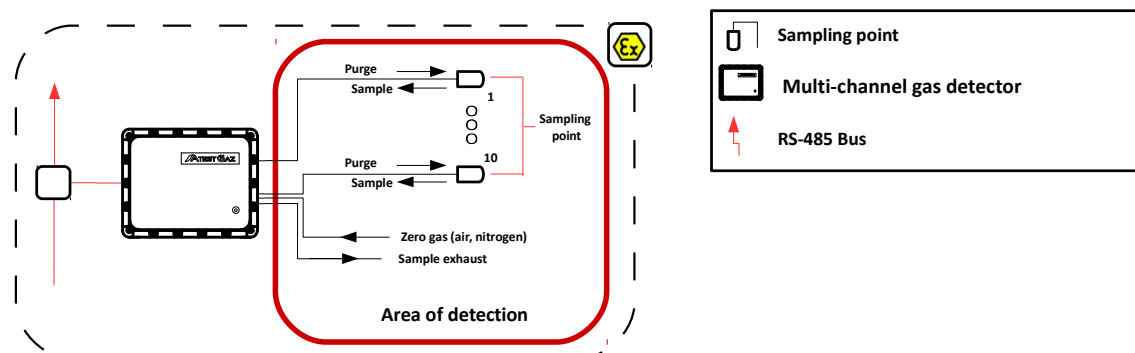
Environmental resistance

The sampling point can be located at a distance from the instrument. For this reason, RapidGas Multi R507 is a perfect alternative to the traditional point gas detectors, where environmental or operational conditions, such as extremely high or low temperature at the installation point, humidity, or limited access, makes the use of conventional solutions difficult, if not impossible. The sampling system enables the sample to be conditioned (e.g. cooled down) and then transferred to the main module, which can then be installed in a place with convenient access for the operator and with comfortable, standard environmental conditions. Otherwise the sample could be heated up (i.e. sample of liquid natural gas)

Economy

An additional advantage for economical and operational reasons is the use of only one gas detector for ten measuring points.

Location and role of the Gas Detector in Gas Safety System

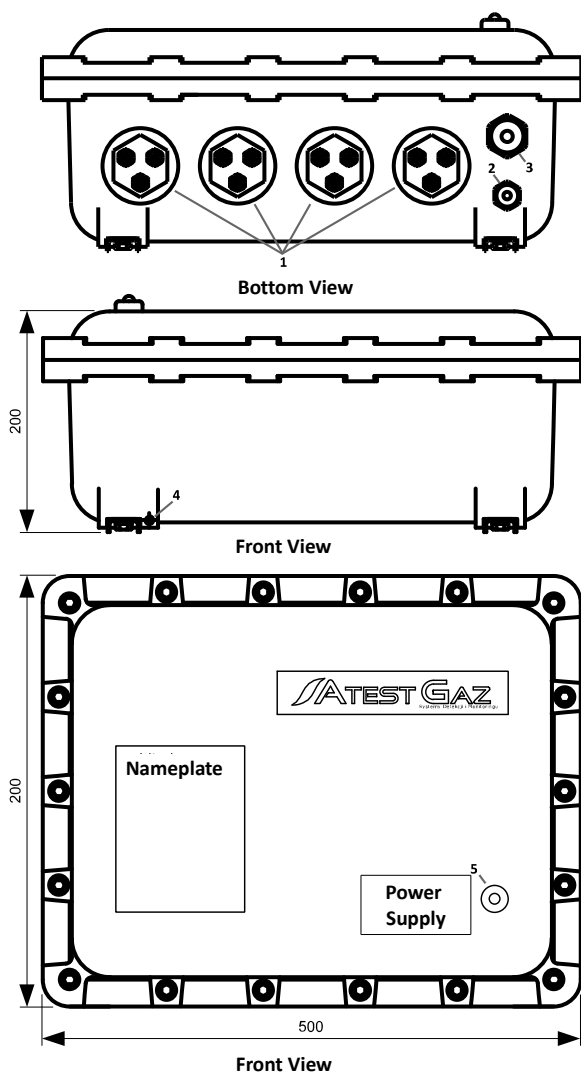


Electrical interface

1			2		
1	2	3	4	5	6
L	N	PE	GND	A	B
Power Supply			RS-485		

No.	Name	Pin	Description
1	Power Supply		Gas Detector Power Supply 230V AC
		L	Power line
		N	Neutral line
		PE	Protective line
2	RS-484		Communication port RS-485
		GND	Shield
		A	Signal line A (inverted signal)
		B	Signal line B (inverted signal)

Dimension



No.	Description
1	Sample interfaces
2	Cable gland for power supply (M20x1,5)
3	Cable gland for data transmission(M20x1,5)
4	PE connector
5	Power-on indicator

Technical specification

Power Supply	
• Voltage Vcc	230 V AC
• Power	300 W
Environment	
• Ambient temperatures	-30 – 35 °C
• Humidity	10 – 90% long term
• Pressure	0 – 99% short term 860 – 1050 hPa
Atex	II 2G Ex db IIB+H2 T4 OBAC 13ATEX0087 X
Measured substance	according to a separate specification
Sampling method	aspiration
Number of measuring channels	10
Timing	
• sampling time	10 – 600 s (depending on the system configuration)
IP	IP 66

Pneumatic interface	
• sampling pipe diameter	6/4 mm
• zero gas consumption	3±1 l/min
Digital communication parameters	
• Electric standard	RS – 485
• Communication protocol	Modbus RTU 19200 b/s, 8N1
Integrated signalling equipment (optical)	Power on indicator
Protection class	I
Cable diameters	
• Power	7,5 – 11,9 mm
• Data transmission	11 – 14 mm
Acceptable cables	0,5 – 2,5 mm ²
Enclosure material	Aluminium spray epoxy
Weight	43 kg

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