
ADOS®

GTR 196

Gas Transmitter



A D O S GmbH
Instrumentation and Control
Trierer Str. 23-25 • 52078 Aachen • FRG

TEL . : +49(0) 241 9769- 0
FAX : +49(0) 241 9769-16
E-Mail : ados.office@t-online.de
Internet : <http://www.ados.de>



Est. 1900

ADOS GTR 196

Gas Transmitter

Application

The gas transmitter ADOS GTR 196 is suitable for continuous measurement of gases in normal areas and areas where there is a risk of explosion.

By employing 4 different types of sensor, noxious, explosive and non-combustible gases and vapours can be measured.

A current signal is generated that is proportional to the measured concentration of gas, which is transmitted to an evaluation unit placed in a safe area, away from any dangers of explosion.

The type test of the explosion-protected gas transmitter, is completed by the DMT..

DMT test certificate : BVS-Nr.:98.E.2002 X

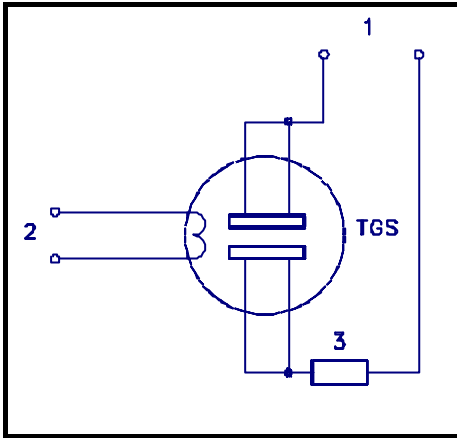
Degree of protection : EEx dme [ia] IIC T6

Fields of Application

- Chemical industry
- Manufacture of paints and varnishes
- Plastics processing plants
- Sewage works
- Gas-fired boiler systems
- Liquid gas storage houses
- Laboratories
- Oxygen concentration measurements
- Refineries
- Cold storage houses (Ammonia monitoring)
- Paint spraying booths
- and many more.

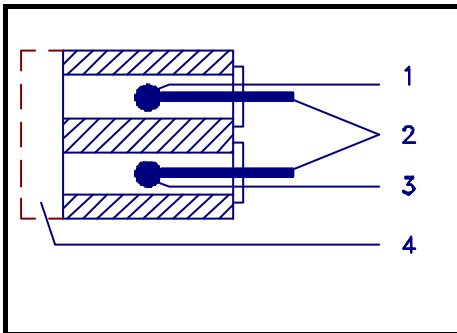
ADOS GTR 196

Gas Transmitter



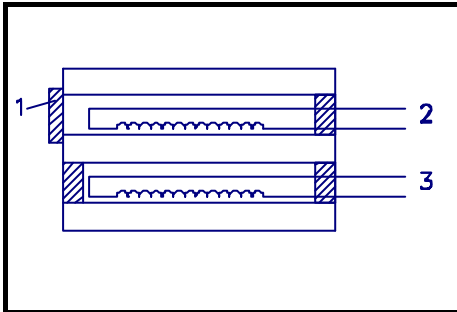
- 1 Circuit voltage
- 2 Heating voltage
- 3 Load resistor

The **TGS sensor** contains a semiconductor sensor, which is constructed on SnO₂-sintered N-substrate. When combustible or reducing gases are absorbed by the surface of the sensor, the concentration of the test gas is determined by the change in conductivity



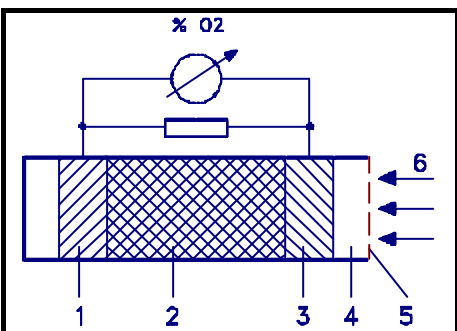
- 1 Inert pellistor
- 2 Electric connections
- 3 Catalyzer pellistor
- 4 Diffusion filter

The head of the **VQ sensor** functions on the principle of heat reaction. When combustible or reducing gases or vapours come in contact with the measuring element, they are subjected to catalytic combustion, which causes a rise in temperature; this rise causes a change in the resistance of the measuring element which is used as a measure of the component of gas being measured. The inert element is for compensating the temperature and conductivity of the test gas.



- 1 Diffusion filter
- 2 Test resistor
- 3 comparison resistor

The **GOW sensor** function os the principle of thermal conductivity. Two rhenium-tungsten resistors are used as a measuring element, where the comparison element is subjected to normal ambient air and the measuring element is subjected to the test gas. Any change in the concentration of gas at the measurement element, causes a change in temperature, which is due to the variation of conductivity. The resultant change in resistance is a direct measure of the gas concentration.



- 1 Anode
- 2 Electrolyte
- 3 Cathode
- 4 Diffusion path
- 5 Diffusion filter
- 6 Test gas

The **TOX sensor** is a measurement system with electro-chemical cell, where the sampled gas is measured by diffusion. In case of oxygen measurement the oxygen content is reduced in an electrolyte, thus producing a small flow of current (electro-chemical process). At a constant air pressure, this current is directly proportional to the oxygen concentration is the sampled air.

The output signal of each sensor is connected to the central unit via a multi-core cable for further processing. All sensors are plug-in types and thus are easily replaceable.

ADOS GTR 196

Gas Transmitter

Technical Data

Type	TGS	VQ	GOW	TOX
Measurement method	Semiconductor	Heat reduction	Thermal conductivity	Electro-chemical cell
Measurement range	ppm ranges to 100 % LEG	ppm ranges to 100 % LEG	from 0 - 5 Vol% to 0 -100 Vol%	ppm ranges to 0 -100 Vol%
Percentage error of f.s.d	±5%	±5%	±3%	±3%
Temperature range	-20...+ 45°C	-20...+ 45°C	-20...+45°C	-20...+45°C
Temperature effect	5%	2%	2%	2%
Response time (t ₉₀)	approx. 20s	approx. 20s	approx. 40s	< 60s
Pressure effect	1%	1%	1%	1%
Mounting position	optional	optional	optional	optional
Application	Poisonous, combustible and explosive gases in the LEL region	Poisonous, combustible and explosive gases in the LEL region	Gases exhibiting substantial differences in thermal conductivity, compared to air	O ₂ , CO, NH ₃ , NO ₂ , SO ₂ , H ₂ S a.o.
Versions available	Single, industrial and Ex-versions	Single, industrial and Ex-versions	Single, industrial and Ex-versions	Single, industrial and Ex-versions
Service life of the sensor	Unlimited, when used for gases not causing catalytic poisoning	Unlimited, when used for gases not causing catalytic poisoning	Unlimited, when used with gases that do not attack aluminium, rhenium-tungsten or gold	12 months to 5 years depending on the measuring cell
Supply voltage	15V-30V	15V-30V	15V-30V	15V-30V
Interface	3-wire techniques, 4-20 mA or LON® four-wire techniques, galvanically isolated, data transmission 78 kbps			
Protection Ex-model	EEx dme "ai" llc T6 BVS-No. 98.E.2002X	EEx dme "ai" llc T6 BVS-No. 98.E.2002X	EEx dme "ai" llc T6 BVS-No. 98.E.2002X	EEx dme "ai" llc T6 BVS-No. 98.E.2002X
Housing	IP 54	IP 54	IP 54	IP 54
Dimensions (WxHxD) mm	180 x 100 mm	180 x 100 mm	180 x 100 mm	200 x 100 mm
Weight	1.1 kg	1.1 kg	1.1 kg	1.1 kg

