



DAT 420

toxic and oxygen
gas detector

CO - O₂ - NH₃ - Cl₂ ...



- ✓ Principle: **ELECTROCHEMICAL**
- ✓ Connection: 2 wires
- ✓ Output signal: 4..20 mA
- ✓ Atex marking: II 2G Ex db IIC T6
 II 2D Ex tb IIIC T85°C



DALEMANS

GAS DETECTION

THE BELGIAN PIONEER IN GAS DETECTION

To guarantee safety and performance, all gas detection installations must be calibrated and maintained regularly in accordance with the manufacturer's instructions.

DAT 420



The **DAT 420 detector** was designed to continuously measure the presence of various **toxic gases** in the air such as **carbon monoxide** and **ammonia** but also **oxygen**.

Its **electrochemical** measurement principle gives it its major assets:

- **measurement stability,**
- **selectivity of the gas to be detected and high accuracy.**

By connecting it to a Dalemans unit or to any other instrument that can receive a **4..20 mA signal**, you will benefit from a highly **flexible installation**.

ATEX certified, this detector will be particularly suitable for **industrial applications located in an explosive environment**.



CHARACTERISTICS

Sensing head	Stainless steel 1.4404 (AISI 316L)
Sintered metal filter	Stainless steel 1.4404 (AISI 316L)
Junction box	Aluminium
Dimensions / Weight	193 x 145 x 90 mm / 1500 g
Sensor type	Electrochemical
Output signal	4..20 mA current loop (2-wires)
Setting	Zero and calibration by internal potentiometers
Accuracy	± 1.5 % full scale
Response time (T90)	< 45 sec.
Lifetime	> 2 years
Supply voltage	15 - 30 Vdc
Consumption	Max. 30 mA
Storage temperature	-40 °C to +80 °C
Operating conditions	
Temperature	-10 °C to +40 °C
Ambient humidity	20 - 90 % HR
Occasional humidity	10 - 99 % HR
Pressure	90 - 110 kPa
Cable	2 x 0.5 mm ² (twisted and shielded pair)
Max. cable length	1000 m
Loop resistance	50 - 750 ohms
Casing ingress protection	IP66
Cable entry	1 x M20 / 6.1 - 11.7 mm (other sizes available)
Hazardous areas	Zone 1 or 2 (gas) Zone 21 or 22 (dust)
Gas grouping	IIC (methane, propane, ethylene, hydrogen, acetylene)
Standards	EN 60079-0 EN 60079-1 EN 60079-31
Approval	Ex II 2G db IIC T6 Ex II 2D tb IIIC T85°C
Certificate	FTZU 09 ATEX 0074

GASES CONCERNED

Gas	Formula	Density (air=1)	Measurement	
			range (PPM)	TLV (PPM)
Ammonia	NH ₃	0.59	0 - 100	20.00
Carbon monoxide	CO	0.97	0 - 300	25.00
Chlorine	Cl ₂	2.45	0 - 10	1.00
Hydrogen sulphide	H ₂ S	1.19	0 - 50	10.00
Nitrogen dioxide	NO ₂	1.59	0 - 50	3.00
Nitrogen monoxide	NO	1.04	0 - 100	25.00
Oxygen	O ₂	1.00	0 - 25 %	-
Sulphur dioxide	SO ₂	1.19	0 - 20	2.00

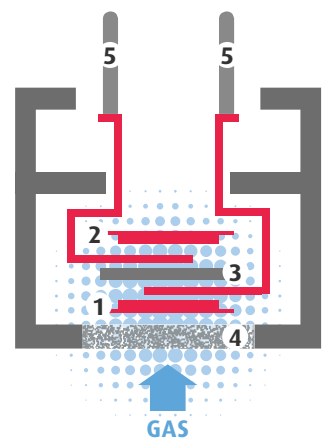
Other gases upon request.

ELECTROCHEMICAL MEASUREMENT PRINCIPLE

The electrochemical cell is made up of a measurement electrode (1), a counter-electrode (2) and a reference electrode (3). These electrodes are bathed in an electrolyte inside the cell casing, which is itself fitted with a gas permeable membrane (4).

The gas which is diffused inside the cell causes a **chemical reaction on the measurement electrode** and on the counter-electrode. The result is an **electric current, proportionate to the concentration of the gas present**, which circulates between these two electrodes.

This current is measured by the external circuit (5) to which the cell is connected.



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rue Jules Mélotte 27 - B-4350 Remicourt

Tel.: +32 (0)19 33 99 43 • Fax: +32 (0)19 33 99 44 • sales@dalemans.com www.dalemans.com