

MEDOR[®] Exp ATEX

On-line analysis & monitoring of sulfur compounds in natural gas and gaseous fuels for hazardous area



Model: Medor[®] Exp ATEX

ATEX:
zones 1 and 2
GROUP IIB T4

Main applications:

Impurities detection in Natural Gas / LPG / Propane / Butane
Propellant gas
Catalyzer protection

Targetted compounds:

In standard : THT / H₂S / DMS / Mercaptans: MM / EM / IPM / TBM / NPM
In option: 2 BM / IBM / NBM

Main markets:

Petrochemical
Gas transportation
Process

Standard:

ASTM D7493-08, ISO 19739:2004, DIN 51855/7



Chromatotec[®] is specialised in VOC, Sulfur and permanent gases analysis at trace and ultra trace levels (ppm, ppb, ppt).
Please visit our website for more details.

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THT

TBM

DMS

H₂S

Bu-SH

Me-SH

Et-SH

MEDOR® Exp ATEX

On-line analysis & monitoring of sulfur compounds in natural gas and gaseous fuels for hazardous area



Description:

The MEDOR® Exp is an industrial gas chromatograph for the analysis and monitoring of sulfur compounds in natural gas and gaseous fuels: H₂S, Mercaptans, Sulfides.

Two versions exist: ppm range or ppb range

Principle:

- Automatic sampling using a loop
- Loop injection by automatic valve on the column
- Isothermal gas chromatograph
- Detection of all compounds eluting from the column performed by Chromatotec's wet cell sulfur specific detector
- Signal provided by electrochemical reaction between the wet cell electrolyte and the sulfur compounds

Key points:

- Fully compliant with ASTM D 7493-08 : Standard Test Method for On-line Measurement of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatograph and Electrochemical Detection
- Internal automatic calibration system allowing automatic validation of the data
- Continuous monitoring with automatic online sampling
- Analytical performances:
 - Specific and very sensitive to sulfur compounds
 - Results validation by automatic standard injection at each analysis
 - Long term stability using wet cell detector installed in reservoir
- Extremely low maintenance
 - Very long life time detector, up to 10 years including electrolyte
 - Low gas consumption, can be reduced in option
 - More than 10 years data storage
 - No calibration cylinders required thanks to internal calibration tube
- Automatic control with process device
- Intelligence system with tunable and interactive alarms levels
- Internal temperature and pressure monitoring
- Powerfull VISTACHROM Chromatotec® software:
 - Remote monitoring & injection control
 - Full traceability with on board archiving of results and chromatograms
 - QC Set up and control of threshold alarms
 - Data export by MODBUS / 4-20 mA / 0-10 V
 - Time stamp results
 - On site direct access to the analyzer with LCD screen and touch pad on front panel

Options:

- External multiple stream selector (up to 16 streams controlled by the analyzer)
- Calculation modules (Average / Statistics / Odor index...)
- Electric selection valve to reduce air consumption
- 24 V DC power supply, can work on battery or solar panel
- Vortex cooler (air consumption depending of external t°)
- X - Purge for Zone 1
- Inert purge with N₂ for low consumption of purge gas with X-purge (can work on N₂ cylinders)
- Internal electric heater and/or cooler for temperature regulation of the Exp cabinet with thermal insulation

Technical specifications:

- Speciation and/or total sulfur

Detection limits:

- **MEDOR® Exp ppm:**
 - H₂S: 0,1 ppm (0,14 mg/m³)
- **MEDOR® Exp ppb:**
 - H₂S: 5 ppb (7,0 µg/m³) or DMS: 2 ppb (5,1 µg/m³)

Range adjustable, depending on application:

- 0/10 or 0/100 or 0/1000 ppm or ppb
- Calculation: total sulfur, total mercaptans...

Relative Standard Deviation:

- RSD < 3% on concentration over 48H.
- RSD < 0.5% on retention time over 48H.

Cycle Time:

- | | |
|-------------------------------------|--|
| • H ₂ S | 120 s |
| • H ₂ S/TOS/T5 | 120 s |
| • THT | 180s (if only THT) |
| • H ₂ S, MM, EM | 300s |
| • H ₂ S, mercaptans, THT | 720 s |
| • H ₂ S, mercaptans, THT | 900 s with CALIB for validation of each analysis |

Supervisor:

- Embed industrial computer Windows® based with LCD display
- 32 GB of hardware storage on SSD memory

Communication:

- MODBUS communication protocol
- 4-20mA
- Ethernet
- 3G module (optional)

Gas supply for GC operation:

- Carrier: zero air or N₂ (3 bar): 4 ml/min. Use N₂ if THT is present
- CALIB: air or N₂ 50 ml/min
- Sample inlet 1 bar: 80 ml/min
- Pneumatic valve: 90 ml/commutation (0 ml in option)

Gas supply for Exp cabinet:

- If air used for dilution: 30 l/min in continue
- If nitrogen used for dilution: 500 l to purge the cabinet and < 0,5 l/min in continue to maintain overpressure

Power supply:

- Main: 230V / 115V or 50/60 Hz
- 24 V DC in option

Electrical consumption:

- 150 VA without options

Dimensions and Weight:

- Height: 800 mm
- Width: 600 mm
- Depth: 300 mm
- Net weight: 40 kg

To order:

MEDOR® Exp ATEX zone1
MEDOR® Exp ATEX zone2

Model:

Upon request
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Chromatotec® is continuously improving its products, therefore these specifications are subject to change without notice

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