MaestroGuard® Analytical Filters

Protection at the Highest Level for Gas Analysis



Engineering Excellence

Why Choose MaestroGuard™ ?

The **MaestroGuard® Filter** represents the cutting edge of gas analysis technology, providing unmatched protection for your valuable analytical equipment. Whether you work in petrochemicals, environmental monitoring, or industrial processes, accurate and reliable gas analysis is critical to success. Contaminants in the gas stream can lead to costly downtime, inaccurate results, and premature failure of analyzers.

What Makes MaestroGuard® Different?
The MaestroGuard® Filter is designed to:

- **Protect Your Investment:** By efficiently captures and removes **liquid aerosols, misted oils, water, glycol, and other fluid contaminants**, the filter safeguards sensitive analyzers from damage, ensuring reliable operation and extending their lifespan.
- **Maintain Precision:** Delivers cleaner gas samples to ensure accurate measurements of impurities, such as sulfur compounds, CO, CO_2, NO and other trace-level contaminants, as well as gas properties like dew point and calorific value.
- **Handle Tough Environments:** Built for explosive, corrosive, and inert gases, it performs reliably under challenging conditions.

With its robust 316L stainless steel construction, non-welded housing for enhanced safety, and state-of-the-art filtration technology using MaestroGuard™ Membrane and Borosilicate Glass Microfibre, the MaestroGuard® Filter combines innovation with practicality.

Who Can Benefit?
Engineered for industries requiring high-precision gas analysis, the MaestroGuard® Filter is ideal for:

- Oil and gas exploration and refining.
- Hydrogen producten and user
- Chemical and petrochemical production.
- Environmental testing and compliance monitoring.
- Power generation and industrial manufacturing.

Our Commitment:
At Analytic Filters Engineering KFT we understand the importance of reliability and precision in your operations. That's why the MaestroGuard® Filter is designed to be your trusted partner, reducing risks, improving performance, and saving you time and money.

Choose MaestroGuard® – because every detail in gas analysis matters.

Technology You Can Trust – Designed for Excellence!

The **MaestroGuard® Filter** combines advanced engineering and premium materials to deliver superior performance in the most demanding gas analysis applications. Every feature is carefully designed to ensure reliability, safety, and ease of use.

1. Robust Housing Design

- **Material:** The housing is made of **316L stainless steel**, known for its exceptional corrosion resistance and durability, even in harsh environments with corrosive or high-pressure gases.
- **Non-Welded Construction:** Eliminates weak points found in welded designs, reducing the risk of leaks and ensuring long-term safety.
- **Compact and Modular:** The two- or three-part housing design simplifies assembly, disassembly, and maintenance.

2. Superior Filtration Technology

- F**ilter Media**: High-performance MaestroGuard® PTFE (Polytetrafluorethylen) ensure chemical resistance and longevity.
- **Micron-Scale Precision:** Filters contaminants effectively with customizable filtration levels to meet specific application needs that incorporates hydrophobic and oleophobic properties
- **Multi-layer membrane design** For enhanced performance, an multi-layer membrane configuration is available to address fine particulate filtration and increased mechanical stability.

3. Wide Compatibility with Gases

- Designed to handle **explosive**, **corrosive**, and **inert gases**, including:
  - Natural gas
  - Hydrogen (H_2)
  - Carbon dioxide (CO_2)
  - Sulfur compounds (H_2S, SO_2)
  - Other industrial gases used in sensitive analytical processes.
- Tested under conditions that simulate real-world industrial and laboratory environments.

4. Safety First

- **Explosion-Proof Design:** Ideal for high-risk environments with explosive gases.
- **Leak Prevention:** Precision machining and robust seals minimize leakage risks, ensuring operator safety and system integrity.

5. Easy Maintenance

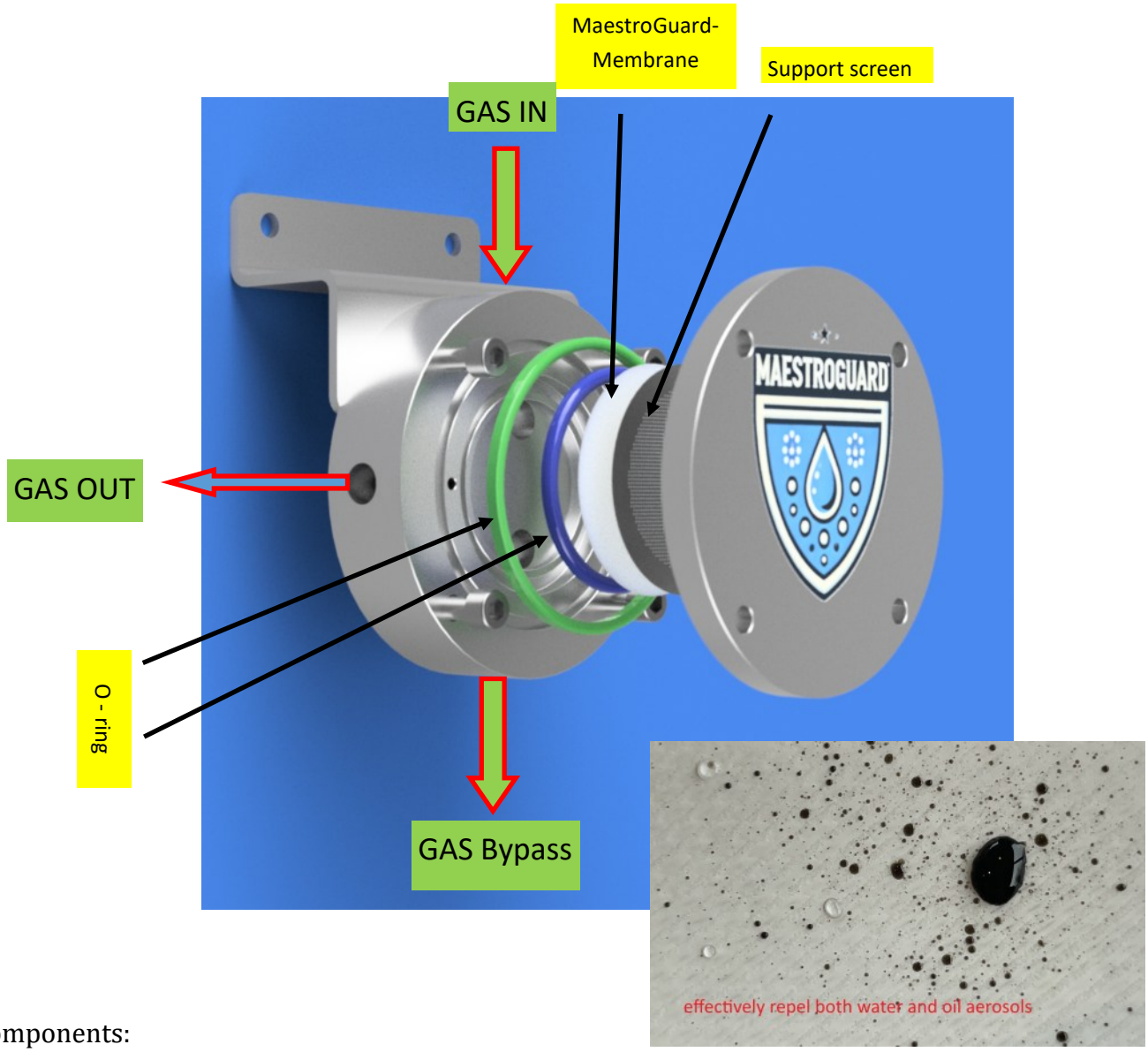
- **Quick Filter Changes:** The modular design allows for fast and simple replacement of filter elements, reducing downtime.
- **Reduced Maintenance Costs:** Durable materials and high-quality construction minimize wear and tear, providing long-lasting performance.

6. Environmental Sustainability

- The materials used are selected not only for performance but also for environmental compatibility, ensuring long-term sustainability in your operations.

The **MaestroGuard® Filter** is engineered to protect your investment, ensure operational efficiency, and maintain the highest standards of gas purity. Its robust and adaptable design makes it the ultimate solution for critical gas analysis applications.

MaestroGuard® Filter Components and Gas Flow



Key Components:

- **MaestroGuard® Membrane**:
  Blocks water, oil, vapour and fine particles from contaminating the gas stream.
- **Housing Material:**
  Made of SS316L, non-weldet construction.
  Consists of two or three parts for easy assembly and maintenance.
- **O-ring Seals**:
  Ensures a tight, leak-proof connection between components.
  Made from high-quality material to withstand high pressures and corrosive gases.

Gas Flow Path:

- **Gas In (Input)**:
  Contaminated gas enters the filter housing for purification.
- **Filtration Process**:
  Gas passes through the MaestroGuard® membrane to remove water, oil, and particulates.
  Clean gas continues through the support screen, ensuring structural integrity.
- **Gas Out (Output)**:
  Purified gas exits the filter, ready for analysis or further processing.
- **Gas Bypass**:
  To ensures that contaminants, such as water and oils, are expelled efficiently, preventing the membrane from clogging and guarantees a constant gas flow, maintaining the system's performance and reliability over time.

Benefits of the MaestroGuard® Filter:

1. Maximum Gas Purity

- The MaestroGuard® membrane prevents particles and liquids such as water and oil droplets, vapors, or condensate from entering the gas stream, ensuring that only dry and clean gas reaches the analyzer.
- The MaestroGuard® membrane blocks oil aerosols and organic contaminants, maintaining the integrity of the sample and preventing unwanted chemical interference.
- The design of the MaestroGuard® membrane setup prevents the degradation of gas purity, which is crucial for precise analytical results and reliable gas composition measurements.

2. Extended Equipment Lifespan

- By eliminating water, oil, and particulate contamination, the filter protects sensitive components in gas analyzers from damage or malfunction.
- The multi-layer configuration reduces the stress on individual membranes, distributing the filtration load and minimizing wear and tear.
- Reduced exposure to contaminants means analyzers require less frequent maintenance, significantly lowering operating costs.

3. Enhanced Filtration Efficiency

- The MaestroGuard® membrane stops microscopic particles, aerosols, vapor, and liquids, ensuring only clean gas passes through to the analyzer.wear and tear.
- The multi-layer filtration system achieves outstanding separation of impurities with minimal pressure drop, optimizing gas flow while maintaining high filtration efficiency.

4. Superior Chemical Resistance

- Material used are highly resistant to aggressive chemicals, acids, and corrosive gases, making it suitable for environments with sulfur compounds (H_2S, SO_2), CO_2, and other reactive gases.
- SS316L support provides additional durability and resistance to organic solvents, ensuring performance stability under challenging conditions.
- This combination allows the filter to handle a wide range of industrial and laboratory gas applications without degradation.

5. Reliable Performance in Harsh Conditions

- MaestroGuard® properties ensure performance in environments with high humidity or condensate-laden gas streams.
- MaestroGuard® capabilities make the filter ideal for gas streams containing oil aerosols or other organic liquids.

7. Reduced Maintenance and Downtime

- Quick and easy filter replacement minimizes downtime during maintenance, allowing operators to restore systems promptly.
- The robust dual-layer design ensures a longer operational lifespan, reducing the frequency of filter replacements and associated costs.
- Operators benefit from a maintenance-friendly design that requires minimal training or tools.
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8. Safety and Environmental Protection

- Explosion-proof design and non-welded 316L stainless steel housing reduce risks associated with high-pressure or hazardous gases.
- The leak-proof design protects personnel and equipment, ensuring a safe working environment.
- Sustainable material choices contribute to reduced environmental impact, supporting cleaner and safer operations.

Technical Data: MaestroGuard® Filter:

General Specifications

- **Filter Housing Material:**
  316L Stainless Steel (non-welded): Provides exceptional durability and corrosion resistance in aggressive environments.
- **Filter Media Material:**
  MaestroGuard™ Membrane – Superior Separation of Liquids, Aerosols, and Particles
  Advanced membrane technology stops **all liquid contaminants and particles**, including **oil, water, glycol, and submicron aerosols**, ensuring maximum gas purity and reliability.

Filtration Specifications

- **Filtration Efficiency:**
  Engineered for **exceptional gas purity**, the MaestroGuard Filter effectively removes **solid particulates, water and oil aerosols, fine mists, and liquid droplets**. Its **advanced separation technology** ensures **maximum protection** for critical instrumentation, enhancing system reliability in even the most demanding applications.
- **Flow Rate:**
  Configurable depending on the pore size and application up to 15l/min gas flow
  Bypassflow flow rates: Up to 20 times outlet fow rate.

Operating Conditions

- **Maximum Operating Pressure:**
  Up to 360 bar (depending on system configuration and seals) for **Hydrogen up to 1400bar** on request.
- **Temperature Range:**
  Operating Temperature: Up to **260°C**. (depending on system configuration and seals).
  Suitable for gases with high-temperature and high-humidity conditions.
- **Gases Supported:**
  Explosive, corrosive, and inert gases, including:
  Natural Gas
  Hydrogen (H_2)
  Carbon Dioxide (CO_2)
  Sulfur Compounds (H_2S, SO_2)
  Other reactive gases.

Seal and Safety

- **O-rings and Seals:**
  High-grade elastomers compatible with high-pressure and corrosive gas applications.
- **Explosion-Proof Design:**
  Built to withstand harsh environments in compliance with industry safety standards.
- **Leak Resistance:**
  Non-welded housing and precision O-ring seals ensure a leak-proof design under extreme conditions.

Design and Dimensions

Please contact Analytical Filters Engineering for more details

Customization Options

Membrane pore size, housing dimensions, and bypass flow rates can be tailored to meet specific application needs.

Hydrogen application for high pressure and low temperature—Pressure up to 1400bar

Standard Filter comfigurations:

Particle and Coalescence filter CF-50-316L-160



Product Description

The **MaestroGuard™ Analytical Gas Filter** is specifically designed for critical gas analysis applications. It ensures reliable filtration to protect sensitive analytical equipment from contaminants, enhancing accuracy and longevity. This filter is suitable for explosive, corrosive, and inert gas environments, meeting the requirements of industrial gas preparation and analysis systems.

Key Features

- **Material:** 316L stainless steel, ensuring corrosion resistance and chemical compatibility.
- **Filtration principles**:
  - **Particle filtration:** Removes solid contaminants such as dust, rust, and other impurities from gas or liquid streams.
  - **Coalescence filtration:** Removes liquid droplets by merging small liquid particles into larger ones, which can then be drained.
- **Robust Construction**: Made from **316L stainless steel** for durability and resistance to corrosive gases
- **Compact Design**: Optimized size to fit into limited installation spaces.
- **Borosilicate glass microfibre Elements:** Ensures excellent chemical resistance and a long service life.
- **Maximum Operating Pressure**: Suitable for high-pressure service up to **160 bar**.
- **Temperature Range**: Operates up to **340°C**, depending on sealing material.
- **Easy Maintenance**: Quick assembly and disassembly for membrane replacement and, with no need to disconnect tubing.

Technical Specifications

Parameter	Specifications
Housing Material	316L Stainless Steel 1.4404
Filter Material	Borosilicate glass microfibre Elements
Pore Size	0,1µm to 100µm
Gas Flow Rate	1000 L/h air
Bypass flow Rate	Up to 1200l/h
Pressure Range	350 bar
Temperature Limit*	–40°C up to 327°C
Connections	NPT female
Housing Type	2 part non welded
Applications	Gas Analysis: Explosive, Corrosive, and Inert Gases, including H_2

* depending on sealing material

Optional:

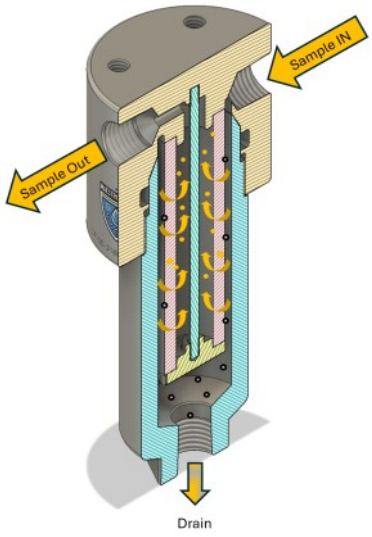
additionel repealing treatment and embrittlement treatment of Stainless Steel housingto prevent possible hydrogen diffusion and material brittleness..

Since the MaestroGuard™ filter does not constitute an electrical or mechanical ignition source, does not generate sparks or self -heating, and contains no moving parts, it can be safely used in explosive environments if installed and operated in accordance with general safety regulations

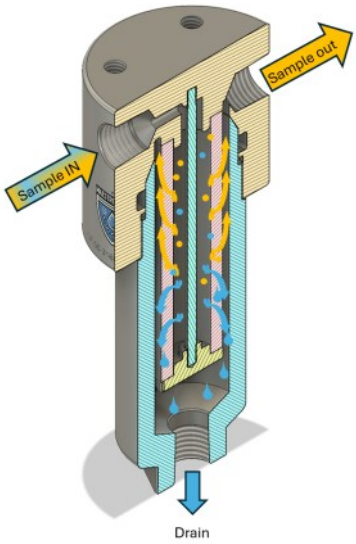
Applications

- Gas preparation for analyzers measuring impurities (e.g., sulfur compounds, CO, CO_2, NO)
- Analytical systems measuring gas properties (dew point, calorific value)
- Laboratory and industrial gas systems for sensitive equipment
- Hydrogen production and related applications

Functional diagram illustrating the CF-50-316L particle filter



Functional diagram illustrating the CF-50-316L coalescence filter

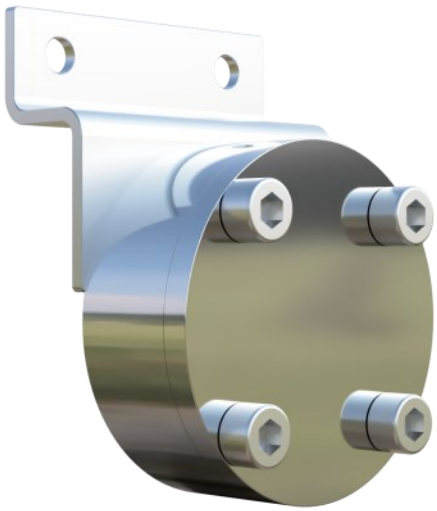


Ordering Information

Order Number	Description
CF-50-316L-160-FKM-V1	CF-50 MaestroGuard™ Gas Filter, 160 bar, O-ring FKM
CF-50-316L-160-FFKM-V1	CF-50 MaestroGuard™ Gas Filter, 160 bar, O-ring FFKM
Option	
MB-CF-50-SS-V	CF-50 Mounting Bracket in Stainless Steel 316L Vertical
MB-CF-50-SS-H	CF-50 Mounting Bracket in Stainless Steel 316L Horizontal
Filter Element	
PFC-50-01B-V1	CF-50 Particle Filter Cartridge 0,1µm, Borosilicate set of 5
PFC-50-01SP-V1	CF-50 Particle Filter Cartridge 0,1µm, Sintered PTFE
PFC-50-10SP-V1	CF-50 Particle Filter Cartridge 1,0µm, Sintered PTFE
PFC-50-100SP-V1	CF-50 Particle Filter Cartridge 10,0µm, Sintered PTFE
PFC-50-250SP-V1	CF-50 Particle Filter Cartridge 25,0µm, Sintered PTFE
CFC-50-01B-V1	CF-50 Coalecing Filter Cartridge 0,1µm, Borosilicate set of 5
CFC-50-10B-V1	CF-50 Coalecing Filter Cartridge 1,0µm, Borosilicate set of 5
Spare Parts	
OCF-50-FKM-V1	CF50 O-ring FKM
OCF-50-FFKM-V1	CF50 O-ring FFKM

Custom configurations are available upon request.

Membrane separator filter MF-60-316L-50



Product Description

The **MaestroGuard® Analytical Gas Filter** is specifically designed for critical gas analysis applications. It ensures reliable filtration to protect sensitive analytical equipment from contaminants, enhancing accuracy and longevity. This filter is suitable for explosive, corrosive, and inert gas environments, meeting the requirements of industrial gas preparation and analysis systems.

Key Features

- **High Filtration Efficiency**: Holds back water, liquid hydrocarbons, acids, alkalis, glycols, and ultra-fine particles
- **Robust Construction**: Made from **316L stainless steel** for durability and resistance to corrosive gases
- **Compact Design**: Optimized size to fit into limited installation spaces.
- **PTFE Membrane Filter Unit**: Ensures excellent chemical resistance and a long service life.
- **Maximum Operating Pressure**: Suitable for high-pressure service up to 50 bar.
- **Temperature Range**: Operates up to **260°C**, depending on sealing material.
- **Easy Maintenance**: Quick assembly and disassembly for membrane replacement and, with no need to disconnect tubing.

Optional: additionel repealing treatment and embrittlement treatment of Stainless Steel housingto prevent possible hydrogen diffusion and material brittleness..

Since the MaestroGuard™ filter does not constitute an electrical or mechanical ignition source, does not generate sparks or self-heating, and contains no moving parts, it can be safely used in explosive environments if installed and operated in accordance with general safety regulations

Technical Specifications

Parameter	Specifications
Housing Material	316L Stainless Steel 1.4404
Filter Material	MaestroGuard® Membrane
Filtrationseffizienz	100% retention of particles >0.1 µm and absolute Liquid Stop
Gas Flow Rate	60 L/h air Higher flow rates are achieved by using membranes with larger pore sizes, while maintaining liquid-blocking performance.
Bypass flow Rate	Up to 300l/h
Pressure Range	Up to 50 bar
Temperature Limit*	–40°C up to 260°C
Connections	NPT female
Housing Type	2 part non welded
Applications	Gas Analysis: Explosive, Corrosive, and Inert Gases, including H_2

* depending on sealing material

Applications

- Natural Gas qualety meassurment
- Gas preparation for analyzers measuring impurities (e.g., sulfur compounds, CO, CO_2, NO)
- Analytical systems measuring gas properties (dew point, calorific value)
- Laboratory and industrial gas systems for sensitive equipment
- Hydrogen production and related applications

Benefits

- **Enhanced Protection**: Prolongs the life of analyzers and ensures consistent measurement accuracy.
- **Reliable Filtration**: Removes contaminants that could otherwise damage downstream equipment.
- **Customizable**: Available in multiple configurations for specific gas types and conditions.
- **User-Friendly**: Simplified installation and membrane replacement process.

Ordering Information

Order Number	Description
MF-60-316L-50-FKM-V1	MaestroGuard® membrane Filter, 50 bar, O-ring FKM
MF-60-316L-50-FFKM-V1	MaestroGuard® membrane Filter, 50 bar, O-ring FFKM
MF-60-316L-50-PTFE-V1	MaestroGuard® membrane Filter, 50 bar, O-ring FFKM
Option	
MB-MF-60-SS	MF-60 Mounting Bracket in Stainless Steel 316L
Spare Parts	
MK-MF-60-FKM-01-V1	MF-60 Service kit: MaestroGuard® Membrane Set 0,1µm, 2 x O-ring FKM
MK-MF-60-FfKM-01-V1	MF-60 Service kit: MaestroGuard® Membrane Set 0,1µm, 2 x O-ring FFKM
MK-MF-60-PTFE-01-V1	MF-60 Service kit: MaestroGuard® Membrane Set 0,1µm, 2 x O-ring PTFE
MF-60-SS-V1	MF-60 Support screen, 316L



Membrane separator filter MF-100-316L-100

Product Description



The **MaestroGuard® Analytical Gas Filter** is specifically designed for critical gas analysis applications. It ensures reliable filtration to protect sensitive analytical equipment from contaminants, enhancing accuracy and longevity. This filter is suitable for explosive, corrosive, and inert gas environments, meeting the requirements of industrial gas preparation and analysis systems.

Key Features

- **High Filtration Efficiency**: Holds back water, liquid hydrocarbons, acids, alkalis, glycols, and ultra-fine particles
- **Robust Construction**: Made from **316L stainless steel** for durability and resistance to corrosive gases
- **Compact Design**: Optimized size to fit into limited installation spaces.
- **PTFE Membrane Filter Unit**: Ensures excellent chemical resistance and a long service life.
- **Maximum Operating Pressure**: Suitable for high-pressure service up to **100 bar**.
- **Temperature Range**: Operates up to **260°C**, depending on sealing material.
- **Easy Maintenance**: Quick assembly and disassembly for membrane replacement and, with no need to disconnect tubing.

Optional: additionel repealing treatment and embrittlement treatment of Stainless Steel housingto prevent possible hydrogen diffusion and material brittleness..

Since the MaestroGuard™ filter does not constitute an electrical or mechanical ignition source, does not generate sparks or self-heating, and contains no moving parts, it can be safely used in explosive environments if installed and operated in accordance with general safety regulations

Technical Specifications

Parameter	Specifications
Housing Material	316L Stainless Steel 1.4404
Filter Material	MaestroGuard® Membrane
Filtrationseffizienz	100% retention of particles >0.1 µm and absolute Liquid Stop
Gas Flow Rate	200 L/h air Higher flow rates are achieved by using membranes with larger p izes, while maintaining liquid-blocking performance.
Bypass flow Rate	Up to 1000l/h
Pressure Range	Up to 100 bar*
Temperature Limit	–40°C up to 260°C*
Connections	NPT female
Housing Type	2 part non welded
Applications	Gas Analysis: Explosive, Corrosive, and Inert Gases, including H_2

available in configurations for **liquid filtration and oil–water separation.**

* depending on sealing material

Applications

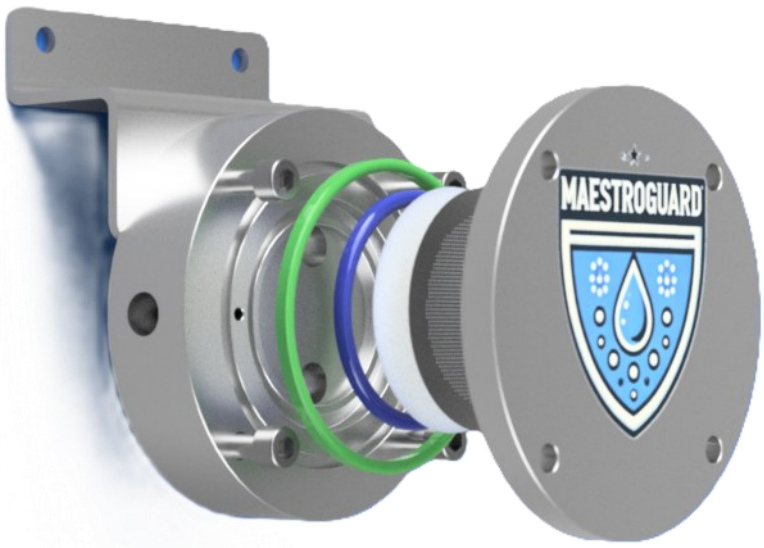
- Natural Gas qualety meassurment
- Gas preparation for analyzers measuring impurities (e.g., sulfur compounds, CO, CO_2, NO)
- Analytical systems measuring gas properties (dew point, calorific value)
- Laboratory and industrial gas systems for sensitive equipment
- Hydrogen production and related applications

Benefits

- **Enhanced Protection**: Prolongs the life of analyzers and ensures consistent measurement accuracy.
- **Reliable Filtration**: Removes contaminants that could otherwise damage downstream equipment.
- **Customizable**: Available in multiple configurations for specific gas types and conditions.
- **User-Friendly**: Simplified installation and membrane replacement process.

Ordering Information

Order Number	Description
MF-100-316L-100-FKM-V1	MF-100 MaestroGuard™ membrane Filter, 100 bar, O-ring FKM
MF-100-316L-100-FFKM-V1	MF-100 MaestroGuard™ membrane Filter, 100 bar, O-ring FFKM
MF-100-316L-100-PTFE-V1	MF-100 MaestroGuard™ membrane Filter, 100 bar, O-ring PTFE
Option	
MBMF/MCF-100-SS	MF / MCF-100 Mounting Bracket in Stainless Steel 316L
Spare Parts	
MK-MF-100-FKM-01-V1	MF-100 Service kit: MaestroGuard™ Membrane Set 0,1µm, 2 x O-ring FKM
MK-MF-100-FFKM-01-V1	MF-100 Service kit: MaestroGuard™ Membrane Set 0,1µm, 2 x O-ring FFKM
MK-MF-100-PTFE-01-V1	MF-100 Service kit: MaestroGuard™ Membrane Set 0,1µm, 2 x O-ring PTFE
MCF/MF-100-SS-V1	MF / MCF-100 Support screen, 316L for MF amd MCF-100



MMF-80 MaestroGuard® Membrane Dual Stage Filter Separator

The **MMF-80 MaestroGuard®** is a compact, high-performance **membrane filter separator** designed to protect sensitive gas analyzers from liquid carryover, aerosols, and particulates under demanding sampling conditions.

The MMF-80 integrates an **inertial pre-separation stage (InertiaGuard™)** with a **dual MaestroGuard® PTFE membrane system**, providing a robust, staged protection concept optimized for **very low sample and bypass flow rates**.



The inertial pre-separation stage employs a controlled **rotational flow with centrifugal components** to mechanically remove free water and oil droplets before they reach the membrane. This reduces liquid load, prevents membrane wetting, and significantly extends service life. Fine aerosols are intentionally handled by the downstream membranes.

The **MaestroGuard® membranes (0.1 µm nominal)** are manufactured from **100 % PTFE** and are both **hydrophobic and oleophobic**, forming an **absolute gas/liquid barrier** without absorption, fiber shedding, or chemical interaction with the sample gas.

The MMF-80 is particularly suited for **trace analysis and high-value analyzers**, where stable sample conditioning, minimal dead volume, and long-term reliability are critical.

Key Features

- Inertial liquid pre-separation
- Dual MaestroGuard® PTFE membrane system (0.1 µm nominal)
- Absolute liquid blocking (water & oil)
- Stable performance at very low flow rates
- Low pressure drop
- Compact, all-metal construction
- Suitable for aggressive and high-pressure gases

Optional: additionel repealing treatment and embrittlement treatment of Stainless Steel housing to prevent possible hydrogen diffusion and material brittleness.

Technical Specifications:

Parameter	Specifications
Housing Material	316L Stainless Steel 1.4404
Filter Material	MaestroGuard® Membrane
Filtrationseffizienz	100% retention of particles >0.1 µm and absolute Liquid Stop
Gas Flow Rate	300 L/h air Higher flow rates are achieved by using membranes with larger pore sizes, while maintaining liquid-blocking performance.
Bypass flow Rate	Up to 500l/h
Pressure Range	Up to 160 bar
Temperature Limit	–40°C up to 260°C*
Connections	NPT female
Housing Type	3 part non welded
Applications	Gas Analysis: Explosive, Corrosive, and Inert Gases, including H_2

available in configurations for **liquid filtration and oil–water separation.**

* depending on sealing material

Applications

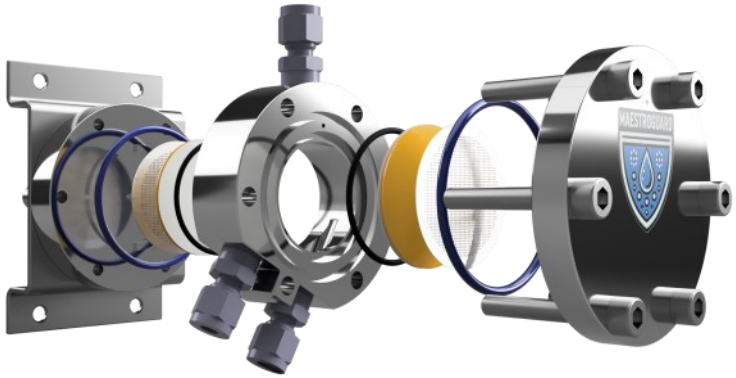
- Natural gas and LNG analysis
- Biogas, Landfill & Renewable Gases
- Hydrogen and specialty gas sampling
- Refinery & Petrochemical Applications
- GC, BTU, moisture, sulfur, oxygen analyzers
- Environmental & Emissions Monitoring
- Sample conditioning systems with risk of liquid carryover

Benefits

- **Effective protection against liquid carryover** Inertial pre-separation removes free water and oil droplets before they reach the membrane, reducing liquid load and preventing sudden analyzer contamination.
- **Absolute liquid blocking** Dual **MaestroGuard® PTFE membranes (0.1 µm nominal)** form a hydrophobic and oleophobic barrier that reliably blocks liquid water and oil, even in the presence of fine aerosols.
- **Optimized for very low flow rates** Stable performance at low sample and bypass flows, where conventional separators and cyclones become ineffective.
- **Extended membrane and analyzer lifetime** Reduced membrane wetting and mechanical stress result in longer service intervals and lower operating costs.
- **High analytical accuracy** Clean, dry sample gas prevents sensor fouling, baseline drift, and measurement errors, ensuring reliable analytical results.
- **Low pressure drop** The compact inertial pre-separation stage provides protection without imposing unnecessary flow resistance on the sample system.
- **Robust and maintenance-friendly design** All-metal construction with no moving parts ensures long-term reliability and simple maintenance.
- **Broad application flexibility** Suitable for natural gas, hydrogen, biogas, refinery gases, and industrial process streams with variable liquid carryover.

Ordering Information

Order Number	Description
MMF-80-316L-160-FKM-V1	MMF-80 MaestroGuard™ membrane Filter, 160 bar, O-ring FKM
MMF-80-316L-160-FFKM-V1	MMF-80 MaestroGuard™ membrane Filter, 160 bar, O-ring FFKM
MMF-80-316L-160-PTFE-V1	MMF-80 MaestroGuard™ membrane Filter, 160 bar, O-ring PTFE
Option	
MB-MMF-80-SS	MMF-80 Mounting Bracket in Stainless Steel 316L
Spare Parts	
MK-MMF-80-FKM-V1	MMF-80 Service kit: 2 x MaestroGuard™ Membrane Set 0,1µm, 4 x O-ring FKM
MK-MMF-80-FFKM-V1	MMF-80 Service kit: 2 x MaestroGuard™ Membrane Set 0,1µm, 4 x O-ring FFKM
MK-MMF-80-PTFE-V1	MMF-80 Service kit: 2 x MaestroGuard™ Membrane Set 0,1µm, 4 x O-ring PTFE
MMF-80-SS-V1	MMF-80 Support screen, 316L



MaestroGuard® MCF-100-316L-220—**Dual-Stage Filtration**

Product Description



The MaestroGuard® Dual-Stage Filter combines the benefits of a coalescing filter with the proven advantages of MaestroGuard® technology. Specifically designed for critical gas analysis applications, it ensures reliable filtration to protect sensitive analytical equipment from contaminants, thereby enhancing both accuracy and longevity.

Engineered for use in **explosive, corrosive, and inert gas environments**, this filter meets the stringent requirements of industrial gas preparation and analysis systems, delivering superior performance in demanding conditions.

Key Features

- **High Filtration Efficiency**: Holds back water, liquid hydrocarbons, acids, alkalis, glycols, and ultra-fine particles
- **Robust Construction**: Made from **316L stainless steel** for durability and resistance to corrosive gases
- **Compact Design**: Optimized size to fit into limited installation spaces. Utilizes two membranes to double the gas flow while maintaining a compact footprint.
- **MaestroGuard Membrane Filter Unit**: Ensures excellent chemical resistance and a long service life.
- **Maximum Operating Pressure**: Suitable for high-pressure service up to **220 bar**.
- **Temperature Range**: Operates up to **260°C**, depending on sealing material.
- **Easy Maintenance**: Quick assembly and disassembly for membrane replacement and, with no need to disconnect tubing.

Optional: additionel repealing treatment and embrittlement treatment of Stainless Steel housing to prevent possible hydrogen diffusion and material brittleness.

Technical Specifications:

Parameter	Specifications
Housing Material	316L Stainless Steel 1.4404
Filter Material	MaestroGuard® Membrane combined with Borosilicate Coalecing Element
Filtrationseffizienz	100% retention of particles >0.1 µm and absolute Liquid Stop
Gas Flow Rate	200 L/h air Higher flow rates are achieved by using membranes with larger pore sizes, while maintaining liquid-blocking performance.
Bypass flow Rate	Up to 100l/h
Pressure Range	Up to 220 bar*
Temperature Limit	–40°C up to 260°C*
Connections	NPT female
Housing Type	2 part non welded
Applications	Gas Analysis: Explosive, Corrosive, and Inert Gases, including H_2

* depending on sealing material

Applications

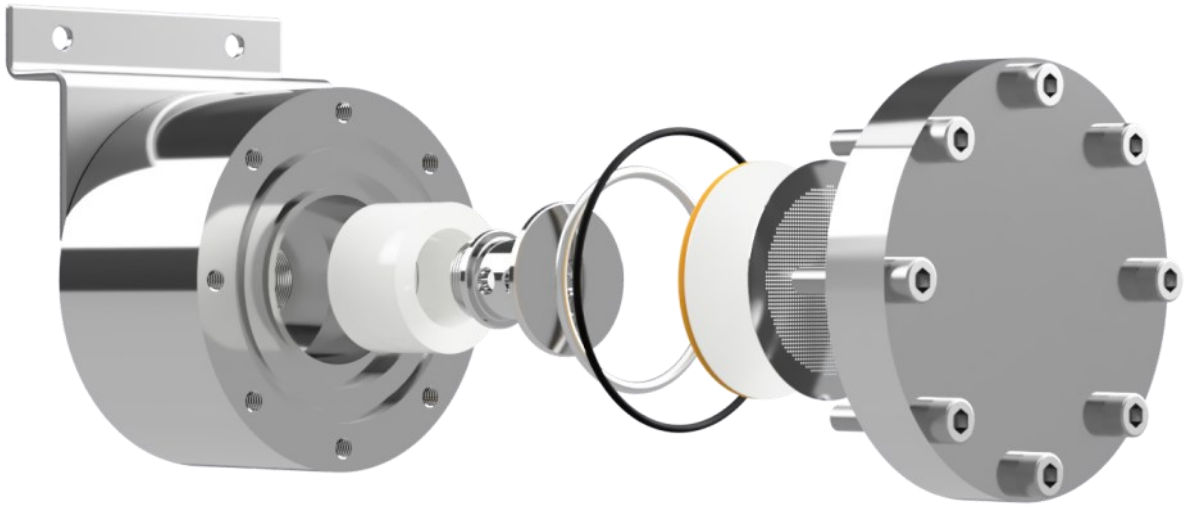
- Natural Gas quality meassurment
- Gas preparation for analyzers measuring impurities (e.g., sulfur compounds, CO, CO_2, NO)
- Analytical systems measuring gas properties (dew point, calorific value)
- Laboratory and industrial gas systems for sensitive equipment
- Hydrogen production and related applications

Benefits

- **Enhanced Protection**: Prolongs the life of analyzers and ensures consistent measurement accuracy.
- **Reliable Filtration**: Removes contaminants that could otherwise damage downstream equipment.
- **Reliable Filtration**: Removes contaminants that could otherwise damage downstream equipment.
- **Enhanced Filtration:** The MaestroGuard® Dual-Stage Filter optimizes gas purification by combining a **high-efficiency mem brane** with a **coalescing element**. This dual-stage design ensures superior removal of particulates, aerosols, and fine contaminants, significantly reducing the risk of analyzer damage and measurement errors.
- **Customizable**: Available in multiple configurations for specific gas types and conditions.
- **User-Friendly**: Simplified installation and membrane replacement process.

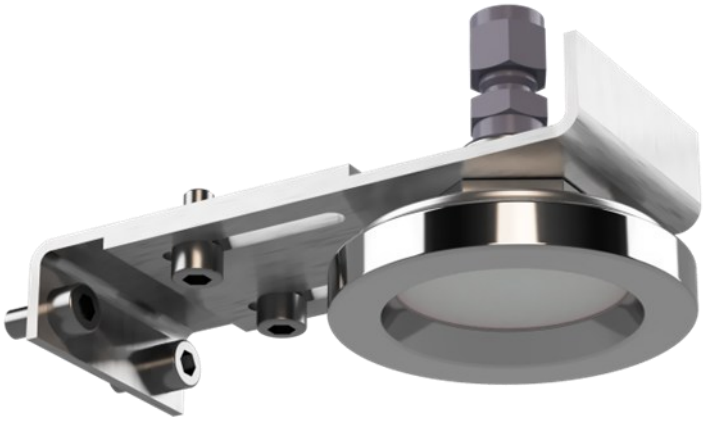
Ordering Information

Order Number	**Description**
MCF-100-316L-220-FKM-V1	MCF-100 MaestroGuard™ membrane / coalescing Filter, 220 bar, O-ring FKM
MCG-100-316L-220-FFKM-V1	MCF-100 MaestroGuard™ membrane / coalescing Filter, 220 bar, O-ring FFKM
MCG-100-316L-220-PTFE-V1	MCF-100 MaestroGuard™ membrane / coalescing Filter, 220 bar, O-ring PTFE
Option	
MB-MF/MCF-100-SS	MF / MCF-100 Mounting Bracket in Stainless Steel 316L
Spare Parts	
MK-MCF-100-FKM-01-V1	MCF-100 Service kit: MaestroGuard™ Membrane Set 0,1µm, Coalescing Element, 2 x O-ring FKM
MK-MCF-100-FfKM-01-V1	MCF-100 Service kit: MaestroGuard™ Membrane Set 0,1µm, Coalescing Element, 2 x O-ring FFKM
MK-MCF-100-PTFE-01-V1	MCF-100 Service kit: MaestroGuard™ Membrane Set 0,1µm, Coalescing Element, 2 x O-ring PTFE
SS-MCF/MF-100-V1	MF / MCF-100 Support screen, 316L for MF amd MCF-100



MAESTROAIR™ — Let your analyzer breathe clean

Product Description



The MaestroAir is a high-performance, compact air filtration unit specifically developed for gas analysis and measurement applications where clean, dry air is critical. With its robust design, optimized flow dynamics, and advanced filtration technology, MaestroAir ensures maximum reliability and measurement accuracy in industrial environments.

Key Features:

- **Positioned at the Air Intake** Installed directly at the air intake point, MaestroAir protects the **entire system** from **all types of contamination**, including dust, aerosols, moisture, and oil mist.
- **Compact and Modular Design** Designed for easy integration into existing sample conditioning systems or as a standalone filtration module.
- **Efficient Particle and Coalescing Filtration** Available with various filter elements (0.1 – 10 µm) for removing fine particles and aerosols (liquid droplets).
- **MaestroGuard™ Membranes** Provides enhanced protection against oil mist and moisture for critical gas measurements.
- **Corrosion-Resistant Housing** Made of high-grade stainless steel (316L) or optionally coated aluminum, suitable for harsh and demanding environments.
- **Pressure and Temperature Range** Rated for operating pressures up to 10 bar and temperatures up to 85°C.
- **Connection Types** Standard with 1/4" NPTF or G1/4" threads; other types available on request.

Engineered for use in **explosive, corrosive, and inert gas environments**, this filter meets the stringent requirements of industrial gas preparation and analysis systems, delivering superior performance in demanding conditions.

Technical Specifications:

Parameter	Specifications
Housing Material	316L Stainless Steel 1.4404
Filter Material	MaestroGuard® Membrane
Filtrationseffizienz	Ensures 100% retention of particles >0.1 µm and absolute Liquid Stop—no ingress into the air sampling system
Gas Flow Rate	180 L/h air (or customised up to 1000L/h)
Water Entrapment Performance	> 5,5bar
Bypass flow Rate	n/a
Pressure Range	Up to 10 bar
Temperature Limit	–30°C up to 260°C*
Connections	NPT female
Housing Type	2 part non welded
Applications	Air Analysis: Explosive, Corrosive, and Inert Gases, including H_2

* depending on sealing material

Applications

MaestroAir is specifically engineered for use in environments where clean, dry air is essential for reliable gas analysis and leak detection — even under challenging conditions:

- **Air quality monitoring systems** Provides clean, dry intake air for accurate measurement of ambient and process air quality
- **Leak detection at critical points** Ideal for mounting at **valves, exhaust vents, fittings, and safety devices** to protect sensitive gas detection equipment.
- **Ventilation and exhaust air sampling** Used at extraction points to prevent moisture and particles from reaching analyzers.
- **Emission and process monitoring (CEMS/PEMS)** Ensures dry and particle-free gas samples even in aggressive plant environments.
- **Air intake near deluge systems or sprinkler zones** Suitable for installations in **areas exposed to emergency water spray**, thanks to its liquid-blocking coalescence filter and optional hydrophobic membrane.
- **Industrial hygiene and HVAC monitoring** Protects sampling equipment in cleanrooms, pharmaceutical production, or controlled air environments.

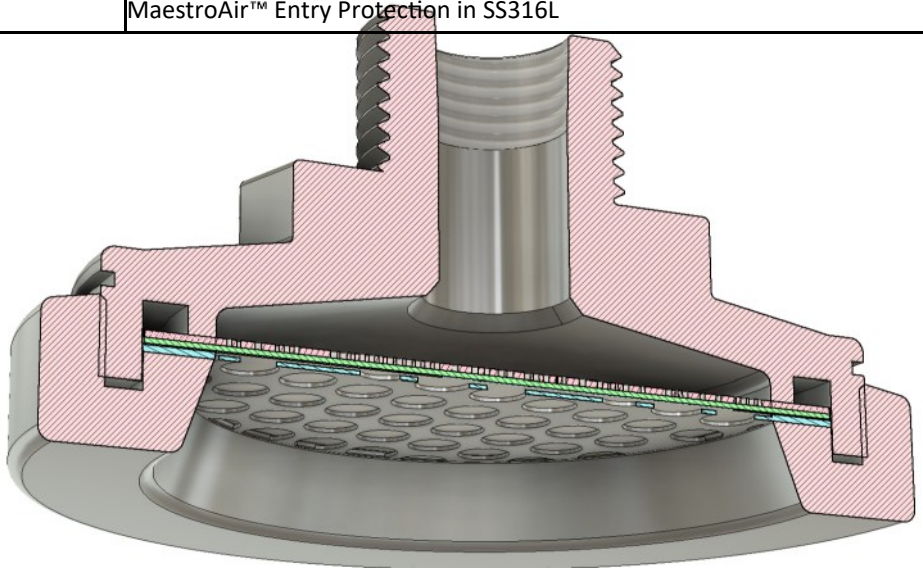
Benefits

- **Effective in Wet or Harsh Environments** Prevents water ingress even when exposed to **deluge systems**, making it ideal for oil & gas platforms, chemical plants, and safety zones.
- **Protects Sensors at the First Contact Point** Positioned directly at the sampling location to **block particles, moisture, and aerosols** before they reach sensitive analyzers.
- **100% Filtration Efficiency for Particles >0.1 µm** Ensures maximum purity for reliable detection — critical in trace-level gas measurements.
- **Prevents Liquid** Penetration Coalescing filter with optional oleo-/hydrophobic membrane keeps liquids out of the gas path.
- **Durable and Corrosion-Resistant** 316L stainless steel housing and chemically resistant seals are designed for ATEX and harsh industrial zones.

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Ordering Information

Order Number	Description
MAF-80-316L-V1	MaestroAir™ Ambient Air Filter, Cone Ø70 mm, housing SS316L
MAF-80-316L-EP-V1	MaestroAir™ Ambient Air Filter, Cone Ø70 mm, housing SS316L with Entry Protection
Option	
MBMAF-80-SS	MaestroAir™ Mounting Bracket in Stainless Steel 316L
Spare Parts	
MK-MAF-80-FKM-01-V1	MaestroAir™ Service kit: MaestroGuard™ Membrane Set 0,1µm, 2 x O-ring FKM
MK-MAF-80-FKM-02-V1	MaestroAir™ Service kit: MaestroGuard™ Membrane Set 0,22µm, 2 x O-ring FFKM
MAF-80-SS-V1	MaestroAir™ Support screen, 316L
MAF-80-EP-V1	MaestroAir™ Entry Protection in SS316L

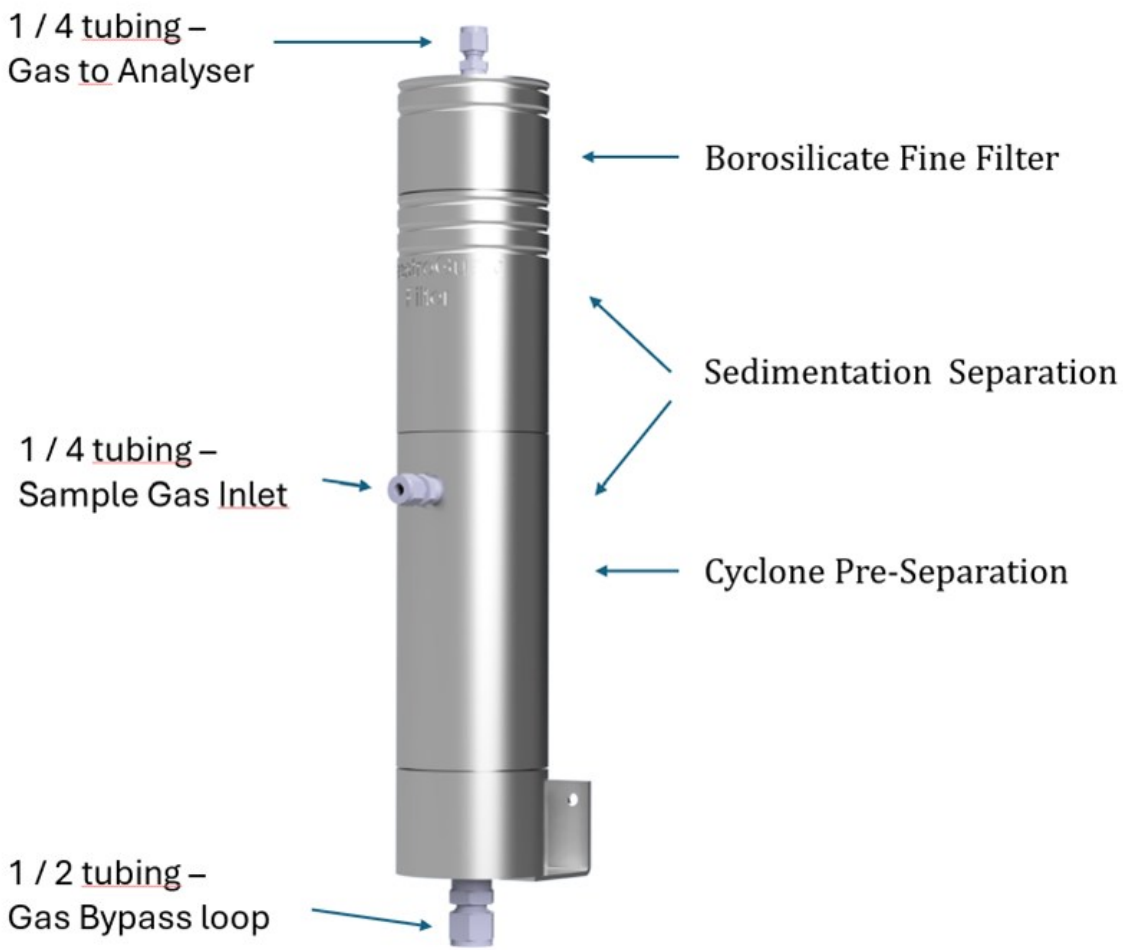


High Impact Separator MGHS-80x410

Precision Filtration for Gas Sample Conditioning: Removing heavy Water, $C_{10}H_8$, Dust, and Tar

System Components:

- Tangential Gas Inlet with Cyclone Effect
- Zylindrical Filter in SS316L (410mm x 80mm, internal 355mm x 60mm)
  - Primary Filter section
  - Borosilicate Glass Filter (5 µm pore size, 30mm x 60mm)
  - Fast-Loop/Bypass for Efficient Contaminant Removal
- Analyzer Gas Outlet at 1 L/min



Important: Every application has its own unique demands. That's why each filter is custom-adapted to your specific operating conditions and performance needs.

The DUO250
Gravity-Assisted Radial-Phase Separator for Crude Oi

Key Specifications

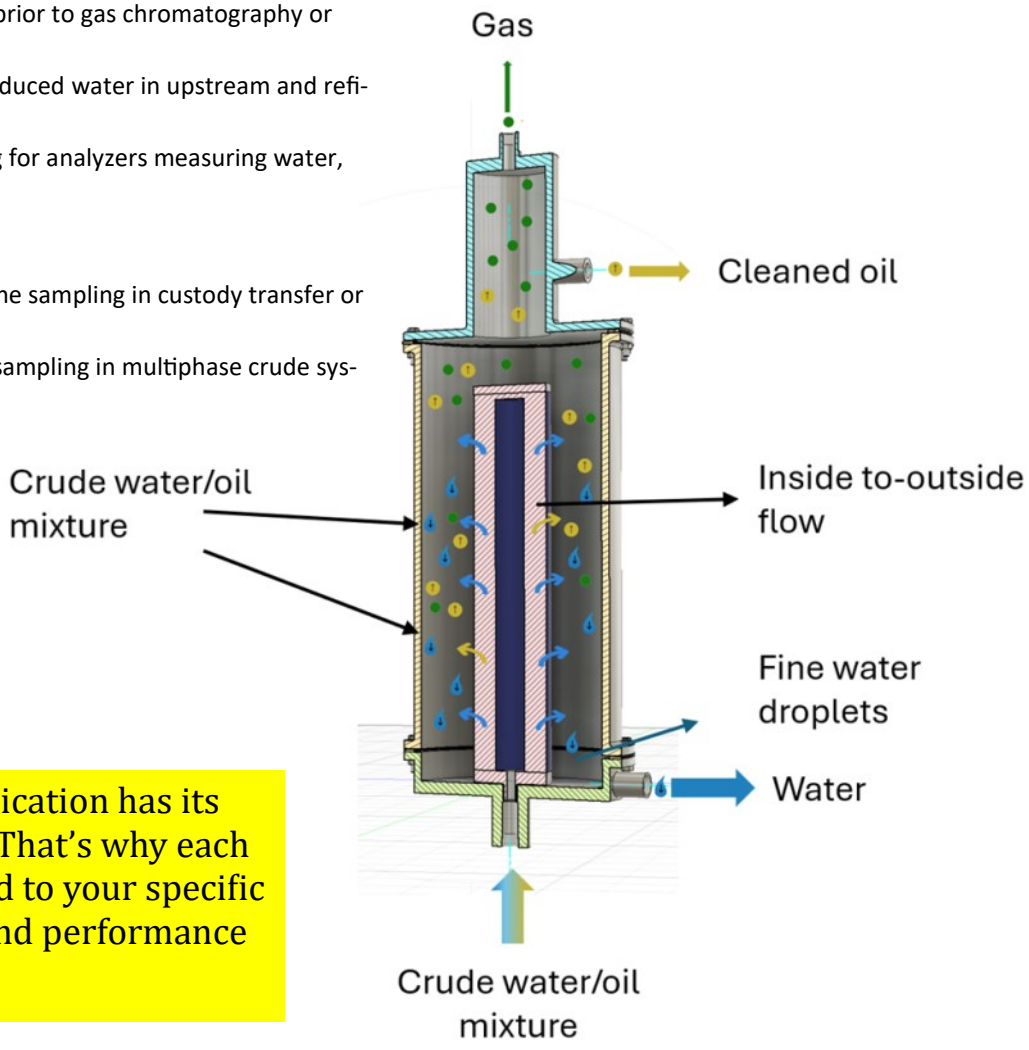
Type: Vertical inline separation unit for crude oil
Flow Rate: 250 L/h | **Retention Time:** ~5.5 minutes
Material: Stainless Steel 316L | **Housing Size:** Ø 250 × 500 mm
Filter Cartridge: High-void-volume coalescer (Ø 200 × 500 mm, ~90% porosity)
Operation: Fully passive – no electricity, no heat, no moving parts
Safety: Suitable for **ATEX Zone 1** (ignition-free design)
Connections: Bottom inlet / top outlet + optional drain and vent ports

Key Benefits

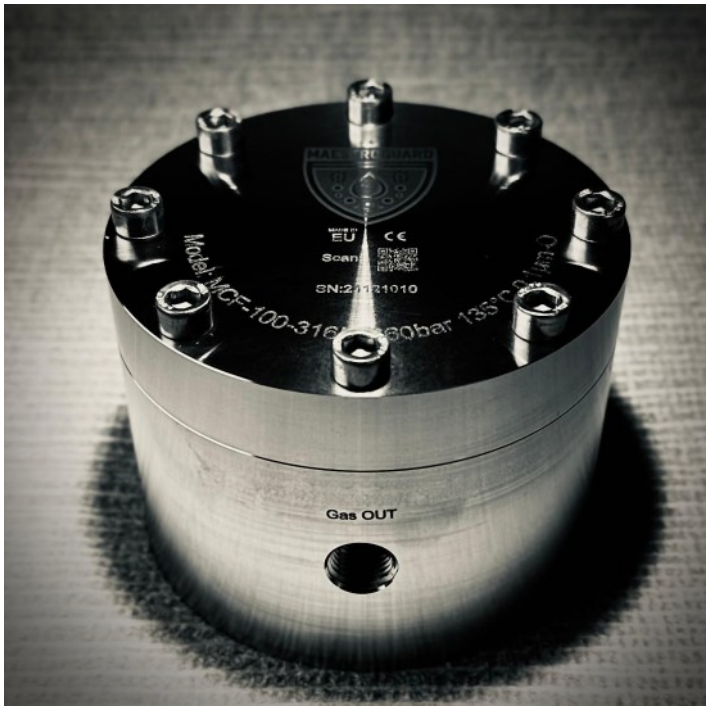
- Reliable separation of water from oil without active components
- Safe for hazardous areas – no ignition sources
- Designed for continuous inline operation
- Maintenance-friendly and robust for industrial environments

Applications

- Removal of free water prior to gas chromatography or online analyzers
- Inline separation of produced water in upstream and refining operations
- Sample preconditioning for analyzers measuring water, density, or sulfur
- Storage tank and pipeline sampling in custody transfer or QA settings
- Offshore or pilot plant sampling in multiphase crude systems



Important: Every application has its own unique demands. That's why each filter is custom-adapted to your specific operating conditions and performance needs.


Gas OUT








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Your Trusted Partner in Industrial Gas Analysis and Filtration

Discover reliability, precision, and innovation with **Analytical Filters Engineering KFT**. We specialize in delivering advanced solutions for gas filtration and analysis tailored to industrial applications. With cutting-edge technology and a dedication to excellence, we ensure your operations achieve optimal efficiency and performance.

Why Choose Analytical Filters Engineering KFT?

1. Expertise You Can Trust:

Our team of seasoned professionals offers unparalleled knowledge in gas filtration and analysis, ensuring your systems are supported by proven expertise.

2. State-of-the-Art Technology:

We utilize the latest advancements in filtration and analytical technology to deliver high-precision solutions that meet your exact requirements.

3. Dependable Reliability:

Our products are engineered for consistent performance, reducing downtime, enhancing operational stability, and maintaining peak productivity.

4. Easy Integration:

Our filtration systems are designed to integrate seamlessly with your industrial infrastructure, ensuring smooth operations without unnecessary disruptions.

5. Tailored Solutions for Your Needs:

Every industrial challenge is unique. That's why we work closely with you to create custom solutions that address your specific demands and operational goals.

Committed to Your Success

At **Analytical Filters Engineering KFT**, we don't just provide products; we build partnerships. Our mission is to empower your business with reliable filtration and analytical solutions that safeguard your equipment, enhance efficiency, and deliver consistent results.

Contact Us Today:

Email: info@analytical-filters.com
Website: www.analytical-filters.com

Partner with **Analytical Filters Engineering KFT** and experience the difference of a trusted ally in industrial gas analysis and filtration. Your success is our priority!